The New England
Journal of Medicine

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The Massachusetts Medical Society

ONE HUNDRED AND FORTY-EIGHTH ANNIVERSARY

Copley Plaza Hotel, Boston, June 10-11-12, 1929

BOSTON welcomes the members of the Massachusetts Medical Society to the exercises of the one hundred and forty-eighth anniversary. The larger hospitals of this great medical centre are opening their doors to the visiting fellows and are enthusiastic in their coöperation in presenting stimulating and attractive programs.

The Committee in charge hopes for a large attendance and would welcome visiting fellows of neighboring State Societies. The Society has been fortunate in securing an unusually able group of speakers for the various meetings.

HEADQUARTERS

The Copley Plaza Hotel will be the headquarters of this anniversary. Except for the Monday morning hospital clinics and the Monday luncheon, all the activities of the convention will take place at the hotel. It is admirably suited for the purpose, with large rooms for the meetings, attractive arrangements for the exhibits and excellent location.

REGISTRATION

A registration desk and bureau of information will be open in the lobby of the hotel after 8 A. M. on Monday morning. Members are asked to register at once and get badges and tickets for their dinners and luncheon.

Please register when arriving at hotel.
Hospital clinics start at 9 A. M. Monday.

WHO MAY REGISTER

Members (in good standing) of the Massachusetts Medical Society, whose dues (including those of 1929) are paid, are eligible to register. Visiting physicians who are Fellows of the American Medical Association are cordially invited to register upon presentation of their 1929 card of fellowship.

(Members of the State Society whose 1929 dues are not paid, may make payment at the registration desk.)

RETURN POST CARDS

Return post cards have been sent to all members of the Society in order to approximate the attendance at the anniversary and to show about how many will attend the various hospital clinics and how many will require hotel accommodations. Any members who have not returned cards will help greatly by filling out the answers in full and mailing immediately.

Visiting fellows from other States may write for information about the anniversary to Dr. James Hitchcock at 126 Massachusetts Avenue, Boston.

It is most important for the Committee to know approximately what the attendance will be at the various clinics.

HOTEL ACCOMMODATIONS

The Committee feels that hotel accommodations can best be arranged directly through the management of the Copley Plaza Hotel and the hotel will be very glad to make arrangements for all applicants regardless of whether they prefer to stay at the Copley Plaza or one of the many other attractive hotels of the city. *Because of other conventions going on at the same time it is important to get applications in early.*

TRANSPORTATION

The Committee feels that the majority of the members will come by motor and will use their own cars. As there are clinics in nine hospitals on Monday morning, it seems impracticable to try to arrange bus service. Fellows without cars will doubtless have ample opportunity to ride with friends and if not, the Checker Cab Service is available at all times at the hotel and the distance to the various clinics is not great.

PARKING SPACE

Ample parking space will be found near the hotel. For directions inquire at the door of the hotel.

ENTERTAINMENT

Monday evening has been set aside for an evening of recreation. The Society will have an

informal dinner in the ball room followed by a program, varied in nature, not entirely serious, not entirely unmedical, which the Committee hopes will prove highly entertaining.

Fellows desiring to sit together at this dinner or the annual dinner may leave their names at the registration desk and tables will be reserved.

LUNCHEON, MONDAY, JUNE 10

The trustees of the Beth Israel Hospital, the Boston City Hospital, the Massachusetts General Hospital and the Carney Hospital have kindly arranged to serve luncheon for the visiting fellows following the morning clinics.

SMALLPOX EXHIBIT

In view of the recent smallpox epidemic the State Department of Public Health has kindly arranged an exhibit to give information about this disease.

The Department's exhibit will feature smallpox and vaccination. There will be the following charts:

1. Cases and Deaths from Smallpox in Massachusetts from 1853 through 1928.
2. Smallpox in New England, 1928.
3. The Vaccinal History of Smallpox Cases in the Middleboro Outbreak.

Lantern slides of some of the cases occurring in the Middleboro outbreak.

The following pamphlets will be available for distribution:

1. "Smallpox and Vaccination."
2. "Vaccination Laws, Technic and Certain Administrative Problems."
3. "Vaccination Against Smallpox; Its Technic and Interpretation."

"The Skin Test for Immunity Against Smallpox."

The actual materials necessary to perform vaccination properly will be exhibited.

COMMERCIAL EXHIBITS

The Commercial Exhibits to be shown in the foyer of the hotel are as follows:

Tailby Nason Co., 49 Amherst Street, Cambridge, Mass.

Certified Milk Producers of Metropolitan Boston.

Davies Rose & Co., Ltd., 22 Thayer Street, Boston, Mass.

Surgeons & Physicians Supply Co., 208 Newbury Street, Boston, Mass.

Nestle's Food Company, Inc., 2 Lafayette Street, New York City.

DeVilbiss Mfg. Company, Toledo, Ohio.

E. L. Patch Co., Stoneham Post Office, Boston, Massachusetts.

George H. Crosbie, 79 Milk Street, Boston, Massachusetts.

Kalak Water Company, 6 Church Street, New York City.

Mellins Food Company, 177 State Street, Boston, Massachusetts.

E. F. Mahady Company, 851 Boylston Street, Boston, Massachusetts.

Chas. W. Broadbent, 665 Huntington Avenue, Boston, Massachusetts.

H. G. Fischer & Co., Chicago, Illinois.

Mead Johnson & Company, Evansville, Indiana.

Horlick's Malted Milk Corp., Racine, Wisconsin.

The National Drug Company, Philadelphia, Pennsylvania, and 53 State Street, Boston, Massachusetts.

Hanovia Chemical & Mfg. Co., Newark, New Jersey.

Medical Protective Company, 35 East Wacker Drive, Chicago, Illinois.

American Optical Company.

E. R. Squibb & Sons, 80 Beekman Street, New York City.

DeShell Laboratories Inc., 215-19 Fourth Avenue, New York City.

Victor X-Ray Corporation, 2012 Jackson Boulevard, Chicago, Illinois, and 711 Boylston Street, Boston, Massachusetts.

Engeln Electric Company, 1126 Boylston Street, Boston, Massachusetts.

The Massachusetts Society for Social Hygiene will also exhibit.

HOSPITAL CLINICS

MONDAY MORNING—JUNE 10

BETH ISRAEL HOSPITAL

9:00 C. F. Wilinsky, M.D. Introductory Remarks.

9:15 Harry F. Friedman, M.D. Neoplasm of the Lungs with Special Reference to Treatment.

9:30 Carl Bearse, M.D. Fishbones as a Cause of Intestinal Perforation.

9:45 Hyman Morrison, M.D. The Etiology of Lung Abscess.

10:00 Abraham Myerson, M.D. A Case of Tumor of the Cauda Equina.

10:15 Samuel A. Levine, M.D. Heart Clinic.

10:30 Albert A. Shapira, M.D. The Value of Lipiodol in Diagnosis and Treatment of Gynecological Conditions.

10:45 Hermann L. Blumgart, M.D. Coarctation of the Aorta.

11:00 Harry Linenthal, M.D. Brill's Disease.

11:15 Wyman Whittemore, M.D. Case of Pericarditis.

11:30 Maurice E. Barron, M.D. Thromboangiitis Obliterans.

11:45 Harry C. Solomon, M.D. The Effect of CO_2 Inhalation on Certain Stupors. Moving Picture Demonstration.

12:00 George C. Prather, M.D. The Control of Surgery for Stone, by X-Ray in the Wound.

After the clinics, luncheon will be served to the Fellows by the courtesy of the Trustees of the Hospital.

PETER BENT BRIGHAM HOSPITAL

Large Lecture Room

9:00 to 9:25 David Cheever. A Clinical Talk on the Operative Treatment of Carcinoma of the Gastro-Intestinal Tract.

9:25 to 9:50 M. C. Sosman. Conference on X-Ray Diagnosis of Diseases of the Lungs, of the Bones, of the Alimentary Tract and of the Gall Bladder.

9:50 to 10:15 W. C. Quinby. Methods and Results in the Treatment of Malignant Diseases of the Urinary Tract.

10:15 to 10:45 Harvey Cushing. The Common Cerebellar Tumors of Childhood.

10:45 to 11:10 William P. Murphy. The Treatment of Secondary Anemia.

11:10 to 11:40 Reginald Fitz. Vascular Lesions in Diabetics.

11:40 to 12:05 Samuel A. Levine. Heart Patients as Surgical Risks.

12:05 to 12:30 H. A. Christian. Treatment of Cardiac Edema in Patients Resistant to Digitalis.

CARNEY HOSPITAL CLINIC

10 A. M.

Orthopaedic Division

W. R. MacAusland, Director; A. R. MacAusland, A. L. Brett, H. G. Lee, A. F. Sargent.

W. R. MacAusland and Associates will demonstrate five standardized treatments for disorders of the back.

10 A. M.

Surgical Division

F. B. Lund, Director. Explore upper right quadrant stomach and duodenum. ? Cholecystectomy-spinal anaesthesia.

A. McKay Fraser. Operation will be posted at information desk.

D. F. Mahoney. Operation will be posted at information desk.

F. J. Nash. Explore stomach, duodenum and gall bladder. ? Cholecystectomy.

W. E. Browne. Results of operations on 200 crippled hands. Demonstration of splints used and simple method for making a splint. Standardized operation on a hand with contractures of two fingers.

10:15 A. M.

Gynaecological Division

L. E. Phaneuf, Director; E. L. Kickham, R. J. Heffernan, E. T. Whitney.

Dr. Phaneuf will operate one case—procidentia uteri. Inter-position operation and repair of perineum. Dr. Phaneuf and Associates will report results on a series of cases of cancer of the cervix treated with radium and will demonstrate three cases.

10:30 A. M.

Medical Division

E. J. Denning, Director; L. F. Curran, D. J. Hogan.

Dr. Denning and Associates will start promptly at 10:30 A. M. on Ward visit of 3rd and 4th Medical floors.

We will be pleased to have visiting members remain with us for lunch at conclusion of morning exercises. If you intend being present would you please send a note marked—Secretary in charge, Clinical program, Carney Hospital, Boston, Mass.

BOSTON CITY HOSPITAL

9:00-10:15 A. M.

Operations by the various surgical services.

(Operative lists will be posted at various convenient places.)

Ward visits by the medical services.

Inspection of the Out-Patient Department and the New Surgical Wards, including the Bone and Joint Service.

10:15 A. M.-12:30 P. M.

10:15-10:25: Dr. William R. Morrison.

Acute Perforated Ulcers of the Stomach and Duodenum operated upon under local and Pitkin's anaesthesia.

Balfour Cautery Excision of Gastric Ulcer with Posterior Gastro-enterostomy.

10:25-10:35: Dr. Martin J. English.

Management of Pediatric Service at Boston City Hospital.

10:35-10:50: Dr. Irving J. Walker.

End Results in Surgery of the Biliary Tract.

10:50-11:05: Dr. Henry Jackson, Jr.

Some aspects of Malignant Lymphoma.

11:05-11:15: Dr. Otto J. Hermann.

Some observations on Acetabular Fractures.

Demonstration of a Post-operative Teratoma Case.

11:15-11:30: Dr. F. J. Cotton.

Abduction Fractures of the Tibia. (Fender Fractures.)

11:30-11:40: Dr. Halsey B. Loder.

End Results in Undescended Testicles.

11:40-11:45: Dr. Paul F. Butler.

Renal Tract Abnormalities.

11:45-11:50: Dr. Max Ritvo.

Oesophageal Orifice Herniae.

11:50-12:05: Dr. Frederick W. O'Brien.
Cancer of the Breast (Radiation treatment).

12:05-12:15: Dr. Horace Binney.
Chronic Empyema.
Chronic Pyelitis—Nephrectomy.

12:15-12:25: Dr. Frank L. Richardson.
Technique of Spinal Anaesthesia.

12:15-12:30: Dr. Joseph M. Lynch.
Demonstration of Cases (to be announced).

After the close of Clinic, luncheon will be served in House Officers' Dining Room (new House Officers' Building), by courtesy of the Trustees.

NEW ENGLAND DEACONESS HOSPITAL

8:00-9:00 A. M. Ward Rounds.
E. P. Joslin. Diabetes.
F. H. Lahey, H. M. Clute, S. Jordan. General Surgery.

9:00-12:30 Clinics.

1. L. B. Morrison. X-ray Problems in the Diagnosis of Cancer of the Colon.
2. Donald S. King. Recurrent Pneumonia.
3. Shields Warren. Pathology of Diabetes.
4. Roger I. Lee. Diuretics.
5. H. B. Loder. Acute Subclavian Aneurysm Developing after Amputation of Breast.
6. D. F. Jones, L. S. McKittrick. Diabetic Surgery.
7. Sara Jordan. The Irritable Colon.
8. E. P. Joslin. Treatment of Diabetes.
9. L. P. Tingley. Eye Cases Seen in a General Hospital.
10. H. F. Root. Diabetic Coma and its Treatment.
11. L. G. Richards. Foreign Bodies in the Bronchus.
12. J. H. Waite. Diabetic Vision.
13. B. E. Hamilton. Arteriosclerotic Heart Disease.

MASSACHUSETTS HOMEOPATHIC HOSPITAL

9-12:30

General Surgical Services
Dr. J. Emmons Briggs. Gastric Ulcer.
Dr. Thomas E. Chandler. Gall Stones.
Dr. Charles T. Howard. Inguinal Hernias.

Orthopedic Surgical Service
Dr. A. G. Howard. Subastragalar Arthrodesis. Spinal Fusion.

Weekly Nose and Throat Clinic.
Medical Clinic and Demonstration.
Obstetrical Clinic and Demonstration.
Prenatal Clinic.

MASSACHUSETTS GENERAL HOSPITAL

Clinic 9 A. M. to 12:30 P. M.

Surgical Amphitheatre

9-11:00 OPERATIVE CLINIC: Dr. Lincoln Davis, Dr. E. P. Richardson, Dr. Beth Vincent, Dr. G. A. Leland, Jr., Dr. E. L. Young.

11-12:30 DRY CLINIC:

11:00 Urology: Dr. J. D. Barney and Associates.

11:15 Dr. M. A. McIver: Effect of loss of digestive secretions.

11:30 Tumor Clinic: Dr. R. B. Greenough, Dr. C. C. Simmons, and Associates.

11:45 Orthopedic Conditions: Dr. N. Allison and Associates.

12:00 Peripheral Circulatory Conditions: Dr. A. W. Allen, Dr. L. S. McKittrick, Dr. J. C. White, Dr. H. H. Faxon, Dr. R. H. Smithwick.

12:15 Fractures: Dr. D. F. Jones, Dr. N. Allison, and Associates.

12:45 Luncheon.

PALMER MEMORIAL HOSPITAL

9:30 Dr. George A. Leland
The Use of Radium in Hemorrhage at the Menopause.

10:00 Dr. George Gilbert Smith
Carcinoma of the Prostate.

10:30 Dr. John W. Meachen
The X-ray as Palliative Treatment in Advanced Cancer Cases.

11:30 Dr. Leland S. McKittrick. Subject to be announced.

11:00 Dr. Fletcher H. Colby
Malignant Disease of the Male External Genitalia.

SECTION MEETINGS

MONDAY AFTERNOON, JUNE 10, 2:30 O'CLOCK

Ballroom

SECTION OF OBSTETRICS AND GYNECOLOGY

Officers of the Section

Dr. Frederick L. Good, Boston, *Chairman.*
Dr. Louis E. Phaneuf, Boston, *Secretary.*

1.—Toxemias of Late Pregnancy.

By Dr. H. J. Stander, Baltimore, Md., Associate Professor of Obstetrics, Johns Hopkins University School of Medicine.

Discussion to be opened by: Dr. Foster S. Kellogg, Boston, Instructor in Obstetrics, Harvard University Medical School; Dr. William A. Ham, Dorchester, Professor of Clinical Obstetrics, Boston University School of Medicine; Dr. Norman B. McWilliams, Williamstown.

2.—The Ethics of Cesarean Section.

By Dr. Alonzo K. Paine, Boston, Professor of Obstetrics, Tufts College Medical School.

Discussion to be opened by: Dr. Franklin S. Newell, Boston, Professor of Obstetrics, Harvard University Medical School; Dr. Louis E. Phaneuf, Boston, Professor of Gynecology, Tufts College Medical School; Dr. John M. Gilchrist, Springfield; Dr. Grace E. Rochford, Boston.

3.—Repair of the Pelvic Floor.

By Dr. George M. Shipton, Pittsfield, House of Mercy Hospital.

Discussion to be opened by: Dr. Harold E. Diehl, Quincy, Assistant Professor of Clinical Obstetrics and Instructor in Gynecology, Boston University School of Medicine; Dr. Edward F. Regan, Framingham; Dr. Thomas W. Murphy, Lawrence.

4.—The Treatment of Puerperal Septicemia.

By Dr. Charles J. Kickham, Brookline, Visiting Obstetrician, St. Elizabeth's Hospital.

Discussion to be opened by: Dr. Robert J. Carpenter, North Adams; Dr. Daniel J. Ellison, Lowell; Dr. Edward R. Fleming, West Medford.

5.—Report of the Committee for the Study of the Incidence of Puerperal Septicemia.

By Dr. Charles E. Mongan, Somerville, Chairman of the Committee.

MONDAY AFTERNOON, JUNE 10, 2:30 O'CLOCK

State Suite

SECTION OF TUBERCULOSIS

Officers of the Section

Dr. John B. Hawes, 2d, Boston, *Chairman.*
Dr. Walter A. Griffin, Sharon, *Secretary.*

General subject: *Complications of Pulmonary Tuberculosis.*

1.—Hemoptysis, Pleurisy with Effusion, Spontaneous Pneumothorax.

By Dr. Hugh B. Campbell, Norwich State Tuberculosis Sanatorium, Norwich, Conn.

2.—Tuberculosis Enteritis and Peritonitis.

By Dr. Walter A. Griffin, Sharon Sanatorium, Sharon.

3.—Laryngeal Tuberculosis.

By Dr. Olin S. Pettingill, Essex Sanatorium, Middleton.

4.—Effect of Bronchitis, Influenza, and Pneumonia upon Pulmonary Tuberculosis.

By Dr. Frederick T. Lord, Boston.

MONDAY EVENING, JUNE 10, 6:30 O'CLOCK

Ballroom

Informal Supper followed by entertainment

TUESDAY MORNING, JUNE 11, 9 O'CLOCK

Ballroom

SECTION OF MEDICINE

Officers of the Section

Dr. Lester C. Miller, Worcester, *Chairman.*
Dr. Roger W. Schofield, Worcester, *Secretary.*

1.—Observations on the Healing of Gastric Ulcer.

By Dr. Franklin W. White, Boston.
Discussion by Dr. Sara M. Jordan, Boston.

2.—The Importance of Medical Care and Consultation in Cases of Gall-bladder Disease, also, the Advantage of Spinal Anesthesia in Operations on the Gall-bladder.

By Dr. F. B. Lund, Boston.
Discussion by Dr. R. P. Watkins, Worcester.

3.—Some Phases of the Ulcer Problem.

By Dr. Lewis Gregory Cole, New York City.
Discussion by Dr. P. H. Cook, Worcester.

4.—Newer Studies on the Importance of the Pyloric Motor Mechanism and its effect on Gastric Disease.

By Dr. Martin E. Rehfuss, Philadelphia, Pa.
Discussion by Dr. Edward S. Emery, Jr., Brookline.

TUESDAY MORNING, JUNE 11, 9 O'CLOCK

State Suite

SECTION OF RADIOLOGY AND PHYSIOTHERAPY

Officers of the Section

Dr. William D. McFee, Haverhill, *Chairman.*
Dr. Patrick F. Butler, Boston, *Secretary.*

1.—Electro Surgery (with lantern slides).

By Dr. W. L. Clark, Philadelphia, Pa.

2.—Canti Film (microphotographic moving pictures of normal and abnormal cell division and the effects of radium on the same).

3.—Industrial Physiotherapy (with moving pictures).

By Dr. C. P. Hutchins, Aetna Life Insurance Company, Syracuse, N. Y.

4.—Indications for surgical treatment in ulcer of the stomach and duodenum (with lantern slides).

By Dr. Lewis Gregory Cole, New York City.

TUESDAY MORNING, JUNE 11, 11:30 O'CLOCK

State Dining Room

ANNUAL MEETING OF THE SUPERVISING CENSORS

TUESDAY NOON, JUNE 11

State Suite

ANNUAL MEETING OF THE COUNCIL

Programs of the business to be transacted will be sent to Councilors on June 4.

TUESDAY AFTERNOON, JUNE 11, 2:30 O'CLOCK

Ballroom

SECTION OF SURGERY

Officers of the Section

Dr. Philemon E. Truesdale, Fall River, *Chairman.*
Dr. Leland S. McKittrick, Boston, *Secretary.*

1.—Examination and preparation of the patient for operation.

By Dr. William Mason, Fall River.

2.—Choice of anesthesia.

By Dr. Lincoln F. Sise, Brookline, and Dr. Phillip D. Woodbridge, Boston.

3.—Postoperative complications and their treatment.

By Dr. Eugene H. Pool, New York City.

Discussion to be opened by: Dr. Daniel F. Jones, Boston; Dr. Frederick B. Sweet, Springfield; and Dr. David Cheever, Boston.

TUESDAY AFTERNOON, JUNE 11, 2:30 O'CLOCK

State Suite

SECTION OF PEDIATRICS

Officers of the Section

Dr. Charles A. Sparrow, Worcester, *Chairman.*
Dr. Joseph Garland, Boston, *Secretary.*

1.—Dehydration.

By Dr. James L. Gamble, Brookline.

Discussion opened by Dr. Harold L. Higgins, Boston.

2.—Bacillus Abortus Infection of Milk.

By Dr. Merrill J. King, Mount McGregor, N. Y., Director of the Laboratory of the Metropolitan Life Insurance Company Sanatorium.

Discussion opened by Dr. Lewis Webb Hill, Boston.

3.—Anterior Poliomyelitis.

Moving pictures demonstrated by Dr. Charles F. McKhann, Jr., Roxbury.

ANNUAL DINNER

TUESDAY EVENING, JUNE 11, 6:30 O'CLOCK

Ballroom

Fellows desiring to sit together will please send their names to Dr. James Hitchcock, Chairman of the Committee of Arrangements, 311 Beacon Street, Boston, at the earliest date possible, and proper reservations will be made.

TUESDAY EVENING, JUNE 11

Following the Annual Dinner

Ballroom

THE SHATTUCK LECTURE

By Dr. William H. Robey, Clinical Professor of Medicine, Harvard University.

Subject: *Public Instruction in Medicine.*

Following the Shattuck Lecture

Address by Dr. George H. Bigelow, Massachusetts Commissioner of Public Health.

Subject: *General Practice and the Public Health.*

WEDNESDAY MORNING, JUNE 12, 9:30 O'CLOCK

Ballroom

ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY

Business of the Annual Meeting

Dr. George R. Minot, Professor of Medicine, Harvard University: "The Treatment of Anemia." Dr. Minot will review the treatment of Primary (pernicious) Anemia with liver, and will discuss the value and use of iron and diet in other forms of anemia. The lecture will be illustrated with lantern slides.

The meeting will close with The Annual Discourse.

By Dr. George Cheever Shattuck, Assistant Professor of Tropical Medicine, Harvard University.

Subject: *The Interdependence of Tropical Medicine and General Medicine.*

THE MASSACHUSETTS MEDICAL SOCIETY

OFFICERS AND STANDING COMMITTEES ELECTED BY THE COUNCIL, JUNE 5, 1928

President: John M. Birnie, 14 Chestnut Street, Springfield.
Vice-President: Peer P. Johnson, 163 Cabot Street, Beverly.
Secretary: Walter L. Burrage, 182 Walnut Street, Brookline.
Treasurer: Arthur K. Stone, Auburn Street, Framingham Center.

STANDING COMMITTEES FOR 1928-1929

Committee of Arrangements

James Hitchcock, E. P. Hayden, H. Q. Gallupe, T. H. Lanman, F. H. Colby.

Committee on Publications

Homer Gage, John W. Bartol, R. I. Lee, R. B. Osgood, E. W. Taylor.

Committee on Membership and Finance

D. N. Blakely, Algernon Coolidge, Samuel Crowell, Gilman Osgood, Homer Gage.

Committee on Ethics and Discipline

David Cheever, W. D. Ruston, S. F. McKeen, Kendall Emerson, A. C. Smith.

Committee on Medical Education and Medical Diplomas

P. P. Johnson, A. G. Howard, R. L. DeNormandie, H. P. Stevens, C. H. Lawrence.

Committee on State and National Legislation

J. M. Birnie, A. W. Marsh, T. J. O'Brien, F. E. Jones, Shields Warren.

Committee on Public Health

Dwight O'Hara, E. F. Cody, R. I. Lee, T. F. Kenney, F. G. Curtis.

Committee on Malpractice Defense

F. G. Balch, E. D. Gardner, F. B. Sweet, R. P. Watkins, A. W. Allen.

OFFICERS OF THE SECTIONS FOR 1929—ELECTED BY THE SECTIONS

Section of Medicine

Chairman, Lester C. Miller, Worcester; Secretary, Roger W. Schofield, Worcester.

Section of Surgery

Chairman, Philemon E. Truesdale, Fall River; Secretary, L. S. McKittrick, Boston.

Section of Tuberculosis

Chairman, John B. Hawes, 2nd, Boston; Secretary, Walter A. Griffin, Sharon.

Section of Pediatrics

Chairman, C. A. Sparrow, Worcester; Secretary, Joseph Garland, Boston.

Section of Obstetrics and Gynecology

Chairman, Frederick L. Good, Boston; Secretary, Louis E. Phaneuf, Boston.

Section of Radiology and Physiotherapy

Chairman, William D. McFee, Haverhill; Secretary, P. F. Butler, Boston.

OFFICERS OF THE DISTRICT MEDICAL SOCIETIES

ELECTED BY THE DISTRICT MEDICAL SOCIETIES BETWEEN APRIL 15 AND MAY 15, 1929

BARNSTABLE—*President*, S. M. Beale, Sandwich; *Vice-President*, C. J. Belle, Wellfleet; *Secretary*, J. L. Chute, Osterville; *Treasurer*, H. B. Hart, Yarmouthport; *Librarian*, E. E. Hawes, Hyannis.

BERKSHIRE—*President*, M. S. Eisner, Pittsfield; *Vice-President*, B. W. Paddock, Pittsfield; *Secretary*, H. J. Downey, Pittsfield; *Treasurer*, C. T. Leslie, Pittsfield.

BRISTOL NORTH—*President*, T. J. Robinson, Taunton; *Vice-President*, B. M. Latham, Mansfield; *Secretary*, J. L. Murphy, Taunton; *Treasurer*, J. V. Chatigny, Taunton.

BRISTOL SOUTH—*President*, G. L. Richards, Fall River; *Vice-President*, W. A. Nield, New Bedford; *Secretary and Treasurer*, G. E. Borden, Fall River.

ESSEX NORTH—*President*, R. L. Toppan, Newburyport; *Vice-President*, J. E. Bryant, Haverhill; *Secretary and Treasurer*, J. F. Burnham, Lawrence.

ESSEX SOUTH—*President*, T. L. Jenkins, Topsfield; *Vice-President*, H. P. Bennett, Swampscott; *Secretary*, R. E. Stone, Beverly; *Treasurer*, Andrew Nichols 3rd, Danvers; *Librarian*, C. M. Cobb, Lynn.

FRANKLIN—*President*, W. K. Clark, Greenfield; *Vice-President*, H. M. Kemp, Greenfield; *Secretary and Treasurer*, Charles Moline, Sunderland.

HAMPDEN—*President*, F. B. Sweet, Springfield; *Vice-President*, M. W. Pearson, Ware; *Secretary and Treasurer*, H. L. Smith, Springfield.

HAMPSHIRE—*President*, F. E. O'Brien, Haydenville; *Vice-President*, J. G. Hanson, Northampton; *Secretary and Treasurer*, L. O. Whitman, Northampton; *Librarian*, Jane B. Armstrong, Northampton.

MIDDLESEX EAST—*President*, F. T. Woodbury, Wakefield; *Vice-President*, James Blenkhorn, Stoneham; *Secretary*, A. R. Cunningham, Winchester; *Treasurer*, Richard Dutton, Wakefield; *Librarian*, J. M. Wilcox, Woburn.

MIDDLESEX NORTH—*President*, A. G. Scoboria, Chelmsford; *Vice-President*, J. A. Mehan, Lowell; *Secretary*, T. A. Stamas, Lowell; *Treasurer*, M. D. Bryant, Lowell; *Librarian*, P. J. Meehan, Lowell.

MIDDLESEX SOUTH—*President*, Fresenius Van Nüys, Weston; *Vice-President*, F. W. Gay, Malden; *Secretary*, A. A. Levi, Cambridge; *Treasurer*, Edward Mellus, Newton.

NORFOLK—*President*, S. F. McKeen, Brookline; *Vice-President*, W. A. Lane, Milton; *Secretary*, F. S. Cruickshank, Dorchester; *Treasurer*, G. W. Kaan, Reading.

NORFOLK SOUTH—*President*, G. M. Sheahan, Quincy; *Vice-President*, M. T. Sweeney, Atlantic; *Secretary, Treasurer, and Librarian*, N. R. Pillsbury, South Braintree.

PLYMOUTH—*President*, T. H. McCarthy, Brockton; *Vice-President*, F. W. Murdock, Brockton; *Secretary*, George A. Moore, Brockton; *Treasurer*, L. B. Packard, Brockton; *Librarian*, J. H. Weller, Bridgewater.

SUFFOLK—*President*, Lincoln Davis, Boston; *Vice-President*, W. H. Robey, Boston; *Secretary*, L. S. McKittrick, Boston; *Treasurer*, John Rock, Boston.

WORCESTER—*President*, W. E. Denning, Worcester; *Vice-President*, J. W. O'Connor, Worcester; *Secretary*, E. C. Miller, Worcester; *Treasurer*, R. J. Ward, Worcester; *Librarian*, A. C. Getchell, Worcester.

WORCESTER NORTH—*President*, F. R. Dame, Athol; *Vice-President*, R. C. Jones, Fitchburg; *Secretary*, C. H. Jennings, Fitchburg; *Treasurer*, F. H. Thompson, Jr., Fitchburg.

COUNCILORS—1929-1930

ELECTED BY THE DISTRICT MEDICAL SOCIETIES AT THEIR ANNUAL MEETINGS, APRIL 15 TO MAY 15, 1929

NOTE:—The initials M. N. C. following the name of a Councilor indicate that he is a member of the Nominating Committee. V. P. indicates that a member is a Councilor by virtue of his office as President of a district society and so Vice-President of the general society. C. indicates that he is chairman of a standing committee, Sec. that he is secretary of his District Society.

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E. F. Curry, Sagamore.
W. D. Kinney, Osterville, M. N. C.

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F. A. Hubbard, 157 High Street, Taunton, M. N. C.
J. L. Murphy, 23 Cedar Street, Taunton, Sec.

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G. E. Borden, 132 Franklin Street, Fall River, Sec.

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E. F. Cody, 105 South Sixth Street, New Bedford, M. N. C.
E. F. Curry, 499 Hanover Street, Fall River.
D. J. Fennelly, 276 Winter Street, Fall River.
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S. V. Merritt, 297 Osborn Street, Fall River.
H. E. Perry, 159 Cottage Street, New Bedford.
I. N. Tilden, Barstow Street, Mattapoisett.
Russell Wood, 331 Union Street, New Bedford.

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A. P. George, 397 Main Street, Haverhill.
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L. T. Stokes, 190 Main Street, Haverhill.
W. D. Walker, 121 Main Street, Andover.

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S. A. Mahoney, 630 Dwight Street, Holyoke.
A. G. Rice, 33 School Street, Springfield.
J. P. Schneider, 12 Pleasant Street, Palmer.
H. L. Smith, 249 Union Street, Springfield, Sec.
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A. J. Bonneville, 43 Main Street, Hatfield.
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F. H. Smith, Hadley (Office 150 Main Street, Northampton).
L. O. Whitman, 203 Bridge Street, Northampton, Sec.

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D. T. Buzzell, Main Street, Wilmington, M. N. C.
A. R. Cunningham, 76 Church Street, Winchester, Sec.
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F. L. Smalley, 36 Woburn Street, Reading.
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J. A. Gage, 18 Shattuck Street, Lowell.
J. H. Lambert, 202 Merrimack Street, Lowell, M. N. C.
J. E. Lamoureaux, 763 Merrimack Street, Lowell.
G. A. Leahey, 128 Merrimack Street, Lowell.
G. F. Martin, 226 Central Street, Lowell.
T. A. Stamas, 226 Central Street, Lowell, Sec.

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F. G. Curtis, Chestunt Hill (Newton).
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F. A. Higginbotham, 112 Mt. Auburn Street, Watertown.
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H. J. Keaney, 385 Broadway, Everett.
A. A. Levi, 202 West Newton Street, Boston.
R. W. McAllester, 270 Commonwealth Avenue, Boston.
Edward Mellus, 419 Waverley Avenue, Newton.
C. E. Mongan, 24 Central Street, Somerville.
J. P. Nelligan, 2336 Massachusetts Avenue, Cambridge.
Dwight O'Hara, 751 Main Street, Waltham, C.
A. C. Potter, 520 Commonwealth Avenue, Boston.
W. A. Putnam, 16 Garfield Street, Cambridge.
H. L. Seavey, 1879 Massachusetts Avenue, Cambridge.
J. W. Sever, 321 Dartmouth Street, Boston.
F. G. Smith, 145 Highland Avenue, Somerville.
C. H. Staples, 339 Pleasant Street, Malden.
E. H. Stevens, 1911 Massachusetts Avenue, Cambridge, M. N. C.
A. K. Stone, Framingham Center, Treas.
H. W. Thayer, 355 Walnut Street, Newtonville.
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H. P. Walcott, 11 Waterhouse Street, Cambridge, Ex-Pres.
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W. C. Kite, 17 Russell Street, Milton.
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W. A. Lane, 173 School Street, Milton.
Olga C. Leary, 44 Burroughs Street, Jamaica Plain.
E. N. Libby, Jamaica Plain (605 Commonwealth Avenue, Boston).
W. R. Ohler, Jamaica Plain (270 Commonwealth Avenue, Boston).
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H. B. C. Riemer, Norwood (128 Newbury Street, Boston).
S. A. Robins, Roxbury (636 Beacon Street, Boston).
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Victor Safford, 15 Grovenor Road, Jamaica Plain.
R. D. Schmidt, 12 Butler Street, Dorchester.
J. L. Sullivan, 89 Waverly Street, Roxbury.
H. F. R. Watts, 6 Monadnock Street, Dorchester.
W. A. White, Roxbury (57 Canal Street, Boston).
W. H. Young, Dedham (543 Boylston Street, Boston).

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C. S. Adams, 12 Brooks Street, Wollaston.
T. B. Alexander, Central Street, Scituate Harbor.
W. G. Curtis, 10 Grand View Avenue, Wollaston.
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C. A. Sullivan, 20 Pond Street, South Braintree, M. N. C.

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A. C. Smith, 142 Main Street, Brockton.
D. B. Tuholski, 105 Main Street, Brockton.

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A. W. Allen, 99 Commonwealth Avenue, Boston.
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W. B. Breed, 264 Beacon Street, Boston.
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L. T. Brown, 372 Marlborough Street, Boston.
David Cheever, Peter Bent Brigham Hospital, Boston, M. N. C.
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Conrad Wesselhoeft, 366 Commonwealth Avenue, Boston.

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H. D. Bone, 19 Pleasant Street, Gardner.
W. E. Currier, 87 Merriam Avenue, Leominster.
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Attention! Massachusetts Medical Society Members

IMPORTANT NOTICE

At past conventions there have been complaints from the various hospitals that men have not taken sufficient interest in the clinics. This year, a great deal of time and care have been devoted to the arrangement of interesting clinics at nine of our leading hospitals. Please consult the program and choose the clinics which are of most interest to you and help the hospitals by attending promptly.

APPETITE LOSS IN INFANCY AND CHILDHOOD*

BY JOSEPH GARLAND, M.D.†

IT must seem strange to an intelligent audience, knowing that two primitive instincts—that of self preservation and that of perpetuation of species—are inherent in all animate beings, to be told that even infants may indulge in the personal prerogative of the hunger strike. Persons suspected of or known to have moral principles at stake—political prisoners, militant suffragettes or birth control advocates, have long enjoyed the exercise of this privilege, but it is difficult to conceive of a two months old infant or even a child of the more mature age of a year suffering the pangs of hunger for a high and lofty principle, unless, indeed, he were unusually precocious.

When we were children we ate our meals or we went without them, and generally we ate them. We enjoyed a certain degree of freedom from restraint; not, perhaps to the point of unbridled license, but at least life was freer, simpler, and easier. We played in our yards or on the streets and no great degree of anxiety was expressed concerning us. We walked to school, for the turn of civilization's wheel, literally as well as figuratively, had not yet made it necessary for so many of us to be transported in those very vehicles from which our children must now be protected. Our wealth and our love of luxury, speaking relatively, were not so great, our families were larger and their individual members received less individual attention and were the better for it. The modern child lives in the midst of plenty and does not know what to do with it. He dwells in the land of milk and honey and either one is destructive of an appetite for corned beef and cabbage.

Children are today taken very seriously and they deserve all of the consideration which they receive. The trouble is that they know it, for they are practically told so in so many words. At least their problems are freely discussed before them and it is often quite obvious that they are secretly, if not openly, proud of their enuresis, their anorexia, their nocturnal vigilance and their failure to gain weight at the rate which their parents, for one reason or another, have convinced themselves is necessary in order to avoid dissociation of soul and body.

It is indeed true that the children of the world are recognized among the riches of its nations. Children's Bureaus, welfare organizations and habit clinics have been erected in their behalf. They are weighed, measured and standardized; in the clinics they are familiar spirits; they are visited by the school nurse and brought to the baby hygiene station; before the clinic doctor they stand naked and unashamed, and at home they refuse to eat spinach.

Our impersonal solicitude and our mass activities for the welfare of the nation's children are generally wisely planned and intelligently administered. When we work according to a considered formula we work well. It is in our personal relations that we fail to appreciate the deep significance of the bending of the twig in the shaping of tree. Habit formation begins with the first cry of the infant; the first groping for a source of food, and these habits, like the slender threads which were cast over the sleeping Gulliver in the land of the Lilliputians, soon amount to a mighty bond which only the greatest effort can break. Mother love, great as is its importance in a self-centered world, does not necessarily imply the acme of intelligence, and the sheltered life is not generally the most useful one. The maternal instinct is not to be taken lightly, but the fact of motherhood, strongly as it reaches out for the protection of the infant, does not carry with it any divine inspiration which may be accepted as a true guide in the care of that infant. The whole growth of our lives has been so hemmed in and influenced by environmental factors that our instincts have become somewhat blunted. They can no longer be relied upon as good working hypotheses.

The modern infant, then, if impersonal and experienced advice is not brought to bear upon his care and training, is likely to be unwisely cared for and incorrectly trained. He will be a slave to habit in any event; how much wiser to make him the slave of good habits than of bad ones! There is an old Persian couplet which runs:

> Fooled thou must be, though wisest of the wise;
> Then be the fool of virtue, not of vice.

We need not accept its fatalism, but the advice is practical.

Constantly we are being reminded that a mass of unintelligent misinformation is current concerning the care of infants. That we accept it is a serious reflection on the way in which we accept our responsibility towards them. Many clear springs of knowledge have been tapped but too often in our bewilderment, and sometimes it seems wilfully, we prefer to fill our vessels from the muddy streams flowing out of the morass of ignorance and indifference.

Infants, even of the youngest, may go on hunger strike for sufficient cause, and I believe that in nine cases out of ten the less spectacular although commoner hunger strike of older childhood had its beginnings in the mismanagement of infancy. The first slight threads of habit would have been unnoticed if Gulliver had wakened from his slumbers in time, but he

*Read at the New England Health Institute, Hartford, Conn., April 24, 1929.

†For record and address of author see "This Week's Issue," page 1169.

slept on and when he woke was firmly fettered.

The idea of a child lacking in appetite is a new and amazing thought to the average mother. It is upsetting to her ordered conception of the way a normal child should act. She believes that he has been afflicted with a new and extraordinary disorder of behavior, or that he is sick. Actually he is one of a host of children who are behaving in exactly the same way. Fifty per cent. or more of the children who are brought to the pediatrician's office come with greater or less willingness because of lack of appetite. The problem may not be a very old one, so far as generations go, but it is certainly a common one as the experience of the medical profession and a mass of literature will attest.

The literature on the subject, by the way, excellent as it is, is distinguished chiefly by its monotony, and the present discussion will add little to it except, perhaps, in the way of further monotony. To those who would care, however, to go more deeply into the subject I should recommend a little book by Dr. Charles A. Aldrich[1], entitled "Cultivating the Child's Appetite". In this book the problem is recognized as a comparatively modern albeit an exceedingly common one, and an analysis is made which strikes to the roots of the matter.

Various classifications have been made in the literature of the causes of anorexia. Shapiro[2] divides the subject into acute anorexia, chronic anorexia and anorexia in infants. Acute anorexia, without going into too great detail, he finds is due largely to acute physical disturbances such as acute febrile diseases with consequent checking of gastric secretion, acute digestive upsets and acute pain. Chronic anorexia he believes is due to chronic infections and other diseases, to faulty diet, improper hygiene, overwork and overdiscipline, and simple nervous lack of appetite. Anorexia in infants he attributes to emaciation or prematurity, improper food, improper feeding technique, diarrhoea, constipation or vomiting, prolonged tube feeding and pyloric spasm or stenosis. These causes, it will be noted, are mainly physical or mechanical ones.

C. G. Kerley[3] classifies apparent and real appetite defects in the young in a somewhat different manner, accordingly as they occur in breast fed infants, in bottle fed infants and in older children. Defective appetites in the breast fed he attributes to too frequent feedings, mental disturbances of the mother, high fat content of the milk and too rapid feeding. Difficulties in the bottle fed he attributes to too frequent feedings, physical causes such as sore mouths and lips and head colds, too freely or too slowly flowing nipples, improper temperature of the bottle and improper formulae. Loss of appetite in older children he subdivides according to physical causes, dietary causes and lack of proper training. These children he believes fall into three types: habitually poor feeders who are undersized and underweight, anemic and constipated; well developed and nourished children who demand attention, and "selective feeders".

Bartlett[4], a year ago, made a study of 349 cases, comprising forty per cent. of Out Patient Department admissions over a period of time. These he divided according to organic and functional types, using loss of weight and signs of malnutrition as criteria of diagnoses—certainly more rigid criteria than are demanded by the general public. Thirty-five per cent. of these cases showed no organic pathology; the remainder were found with septic tonsils and adenoids, acute infections, tuberculosis, pyelitis, dental caries, heart disease and constipation. It is interesting to note that he divided them into three groups for treatment, giving one group fifteen grains of saccharated oxide of iron daily, the second group cod liver oil, and the third group liver, broiled beefsteak, or kidney at least three times a week. The gain in appetite and weight was strikingly greatest for the third group.

J. H. Kerley[5] noted that hyperchlorhydria was a frequent cause of defective appetite in older children, who showed a marked desire for food between meals, but whose appetites were quickly satisfied after a small quantity was taken.

These classifications are satisfactory ones, and after all, classifications are valuable only as aids to clear thinking. They provide, as it were, synoptic views for the sake of orderliness, for the human mind has a passion for pigeon holes and often cannot function properly without indulging this passion.

For my own convenience I should classify the causes of appetite loss in children as follows, making, for the sake of simplicity, no differentiation between infancy and childhood.

APPARENT APPETITE FAILURE

Where there is a sufficient intake of food, although it does not, or apparently does not meet the arbitrary requirements set by parents or nurse.

REAL APPETITE FAILURE

A. Physical or Mechanical.

Too frequent feeding, breast or bottle. Irregular feedings and food, especially improper food, between meals. Improper food, especially food rich in fat or too great in amount. Too fast or too slowly flowing nipples. Improper temperature of bottle. Occasionally prolonged tube feedings. Poor hygiene (Insufficient fresh air, sunlight or rest; over clothing, etc.). Abrasions of mouth or lips. Fatigue.

B. Psychic.

Artificial feeding started too soon after birth to prevent initial loss of weight. Forced feedings. Overstimulation of the nervous

system with resultant loss of appetite and perhaps vomiting and diarrhoea. New and unaccustomed foods. Weaning. "Normal" or physiologic loss of appetite. Improper training and discipline.

It is an interesting if paradoxical fact that often much smoke exists concerning this problem where there is no fire. Frequently the appetite difficulty is not a real one at all, existing only in the mind of the parent. This is often the case with nursing infants who take their meals so rapidly that the mother becomes obsessed with the idea that little or no milk has been eaten. Weighing the baby before and after meals will generally banish this illusion. Sometimes a bottle fed infant will fail to finish its carefully calculated formula, but continues to be contented and to gain at a satisfactory rate. This baby does not need as much food as another infant of the same age and weight. One of the greatest boons that could be granted mankind would be an appreciation of the fact that all human beings are individuals with varying digestive capacities, with varying temperaments, levels of activity and caloric needs.

With older children, as with infants, we fail to realize that they may differ in heredity, in habitus and in physical and mental personality. They are not cast in the same mold, nor are they assembled from interchangeable parts like American made automobiles. They are short and stocky, long and thin, heavy or light, active or inactive, thoughtful or thoughtless, as their heredity and a higher Power intended them to be. I know of a pair of diminutive parents who took their child to a well known specialist with the complaint that he did not grow fast enough. When told that Morgan horses could not be bred from Shetland ponies, they departed, more or less satisfied.

Parents allow to become fixed in their minds average standards of weights, to which they feel that their child must conform. Often they find that he is above this standard, which is an unanswerable argument; if he is below it, it is difficult to rid them of their idolatry of the average. They are prone to make unfair comparisons with other children in the family, or with neighbor's children, whom they have set up as standards of normality. They may find that their child, healthy though he is, is absorbing insufficient calories. Would that some enthusiast would start a society for the suppression of the calory!

Something should be said concerning the physical and mechanical causes of appetite failure before we attack the more important psychic factor, although the two, of course, are really so closely inter-related that any division between them is arbitrary and somewhat artificial. In attempting to differentiate them the effort has been to group separately those which are mainly or primarily physical in origin, and those which are predominantly psychic. It must be made obvious that appetite in its very nature is a psychic phenomenon, although one which is produced or abolished by physical causes. Hunger, on the other hand, is a physical phenomenon, a difference which will be dealt with more fully a little later.

The physical causes of anorexia are generally quite apparent in themselves, although frequently it is necessary to disabuse a parent or a nurse of the idea that a physical cause exists where a search discloses none and where it is obvious that the true fault lies elsewhere. In respect to infancy we have mentioned some of the commoner causes such as too frequent, too large or improper feedings, and the employment of an improper technique in feeding, such as a fast or a slow nipple, a bottle that is too hot or too cold, etc. Any of these factors may produce an apparent or real aversion to food which ordinarily disappears when the cause is removed.

Rest and fresh air and sunlight are necessary to keep the body up to a normal level of health without which good appetite does not usually exist. An overclothed baby is not getting sufficient ventilation and elimination through the skin, and is very likely to be restless, fatigued, and unhappy—conditions which are not conducive to appetite. It should be axiomatic that infringement of the simple rules of hygiene is destructive to appetite.

A normal appetite is seldom found in illness. A desire for food may be entirely in abeyance during acute disturbances and does not cause us the least concern. It may, in fact, be interpreted as a protective mechanism since the gastro-intestinal tract, under these circumstances, is not commonly prepared for the reception and utilization of food. Frequently we find that a mother's greatest source of anxiety during the acute illness of a child is the failure to take food, which is generally being urged on the patient at every opportunity. This curious parental failing seems to be as universal as that which induces the mother to have a child with a temperature of 104° dressed and playing on the floor in preparation for the doctor's visit.

In practically all of the chronic diseases, with diseased tonsils and adenoids heading the list in frequency, the desire for food is impaired. I believe we will all agree that the craze for removing tonsils has reached the stage where a new constitutional amendment may soon be in order, and I should deprecate any attempt to encourage their removal as a tonic for jaded appetites. Where there is a history of repeated tonsillar infections, however, and where examination reveals definitely diseased tonsils, they should be removed, not as an appetite stimulant but for the sake of improving the general condition. For the same reason other foci of infection should be eliminated when possible.

It should be very obvious that irregularity of

meals and the habit of eating between meals, especially of sweets and rich foods naturally tends to destroy the desire for food, and it is still a surprise to me to find how frequently lack of appetite in a given child is considered as one of the mysteries of nature, attributable, perhaps, to a bad heart, when the child is allowed to come to the table at odd and irregular hours, and to fill himself up between times on candy, cake and pastry.

Our comprehension of the problem, in the last analysis, depends on our conception of appetite, and on this and its relation to hunger, Aldrich has based his logical study and conclusions.

"Hunger", we here read, "is a more or less painful sensation located in the general vicinity of the stomach. As secondary characteristics it has associated with it indefinite sensations, such as headache, feeling of emptiness, nausea and weakness. * * * * These sensations have been shown to appear synchronously with vigorous contractions of the empty or nearly empty stomach. * * * * They are inhibited by putting almost anything into the stomach, by the sight of food, by various emotions, pleasant and unpleasant, by fevers above 102 degrees, by smoking, and by pressure on the abdomen. They are independent of habit or memory influences for they occur in the stomach of the new born infant who has never taken food." * * * * "Appetite, on the other hand, is a pleasant desire for food, referred more or less accurately to the mouth or throat and having associated with it a memory sense of enjoyment."

It would appear, then, that it is not really the question of hunger which we are considering, for the amount and variety of food eaten depends not upon hunger, but upon appetite. A very little food—a mouthful—may be sufficient to stop the pangs of hunger and yet nutrition would suffer if the appetite did not demand further gratification. Appetite may exist with or without the physical sensation of hunger and eating will continue; if appetite is lacking, with or without the sensation of hunger, the intake of food, beyond the point of stopping the hunger pain will be neglected.

This being the case, we must explain loss of appetite in infants and children, aside from the purely physical reasons, and determine how it can be prevented and cured.

Many, if not most of our appetite defects, I believe, are conceived in infancy, largely through mismanagement of infant feeding, and are confirmed in childhood through improper training and discipline at the later age. Nature has provided a certain lapse of time between the birth of the child and the coming in of milk to the breasts, and during this period most infants lose a modest proportion of their birth weight. This initial loss of weight has been a matter of the gravest concern to pediatricians and obstetricians, many of whom are accustomed to provide a stop gap formula to prevent it. Is it not better for these infants to know the pangs of hunger, to nurse from the scantily supplied breasts, and to develop the sensation of appetite? I believe it is, and I believe that the infants who feed most lustily during their later months are those who hungered and developed appetite during their early days.

Many infants, it is true, and particularly those who have drunk deeply and slept long during their first few months of life will experience what may be designated as a normal or physiologic loss of appetite at some time during their first year. Having gained well in weight to beyond the normal amount they seem to reach a period of satiety; they are happy and contented but they neither eat well nor make any extraordinary gains. All these babies need, like Bo Peep's sheep, is to be left alone and they will come back, but too often we find feedings forced upon them by their anxious mothers or nurses until a happy and normal disinclination to eat is turned into a positive aversion to food. Appetite being a pleasurable sensation, what can kill it more effectively than to have forced upon one food which one does not want?

Another cause of appetite loss in infancy is that overstimulation of the nervous system which comes from too much attention. The infant who is picked up when he cries, who is shown off to visitors and who is constantly insulted with baby talk is very apt to retaliate by irritability, loss of appetite, colic and often such digestive disturbances as vomiting and diarrhoea. Infants are the young of the human race and not animated playthings, and those who respond in the most satisfactory manner are those who are allowed to lead the most vegetative existences.

The period of starting new foods, which includes very definitely the weaning period, presents often the first great obstacle to the continuation of a normal appetite. Habits of eating have become firmly fixed, and infants, like their elders, resent change. This is usually the occasion of the first real hunger strike, if the infant has been successfully, satisfactorily and entirely breast fed until that time, and often one of the best arguments for starting one bottle a day in the earlier months of life. If the baby wins this trial of endurance further trouble is ahead, and I have known them to refuse all feeding for two or three days when the breast was firmly withheld.

I know of no other way to break this stubborn hunger strike than to stand firmly by one's guns, withholding all food except that which the baby is intended to have until hunger overcomes the resistance exhibited and the new type of food is accepted. It goes without saying, of course, that the water intake must be maintained at a reasonable level as it would be folly to turn a well baby into a sick one through this passage at arms. There should be no difficulty in this, for a thirsty baby will drink. The call of hunger and appetite may be withstood for a while through sheer will power, but the demand for water cannot be resisted.

The mere starting of new foods such as cereals and vegetables rarely presents the same difficulties as does the actual weaning from breast to bottle or cup, although occasionally a baby will seem intolerant of these additions to the diet. An easy method is to accustom him to the taste of the new food with gradually increasing amounts taken in the formula, before the final break is made and it is given only from the spoon. Sometimes the same tactics must be resorted to as are necessary in weaning from the breast, bearing in mind, however, that we should never persist with a food which seems actually to disturb digestion.

The instinct of the baby may really be a fairly good guide in the enlargement of his diet as was indicated in an experiment conducted by Dr. Clara M. Davis at the Mt. Sinai Hospital in Cleveland, and mentioned by Dr. Aldrich. Dr. Davis allowed an exclusively breast fed baby of nine months, continuously to make his own selections from a comprehensive assortment of raw and cooked foods. She established the fact that this infant, at least, could voluntarily select a sufficiently nutritious diet not only to maintain a normal growth, but also to cure an early rickets. She noted that he ate more protein than we ordinarily think best to feed children, and of his own accord took cod liver oil in appreciable amounts.

I have mentioned the advisability of starting an early bottle once a day in order to establish the habit of using the bottle as well as to allow a taste of cow's milk to be cultivated. This may reasonably be done, even when a shortage of food does not necessitate it, at the age of two or three months. It must be remembered, however, that the continued success of the nursing is placed in some jeopardy, partly because insufficient stimulation may diminish the secretion of milk and partly because the infant, soon learning to prefer the bottle, may relax in his efforts at the breast, starting, as it were, a reverse hunger strike. The feeding of infants is full of pitfalls for the unwary, but we may comfort ourselves with the reflection that they generally survive if not too badly abused.

It is during our children's infancy that we sow the wind; in their childhood we reap the whirlwind, and during the early years beyond infancy those behavior abnormalities come to fruit which we have fostered or allowed to develop in the earlier months. Now we begin to meet in regular succession those children whose mothers dissolve in tears three times a day at the end of an hour's unsuccessful session with spoon and spinach. At the end of the day's work in ordinary office practice the pediatrician must wonder if there are any children who do eat well.

These children are as a rule solitary children —either only children, or, as Porter[6] notes, the youngest or oldest of a family with long intervals between, or solitary from chronic illness or the resistance of the parents to the natural growth of the child's independence. They are almost invariably children who receive too much attention; who are too definitely the centers of their family circles and who are well aware of the fact. Lowenburg[7], who also found that one-half or more of ambulatory cases came under observation because of anorexia, believes that psychic and abnormal environmental factors are in every instance responsible for the condition, that the trouble is generally laid in infancy, often due to the prolongation of bottle feeding, and that there is definite danger to adult life—that from these children develop the nervous, finicky, egotistical men and women. Truly a crowd of witnesses are ready to bear testimony against the child who will not eat, for his light has not been hid under a bushel and his shortcomings have been well advertised. A child's best press agent is his mother.

In emphasizing the psychic and environmental factors which are so important in the development of appetite neuroses, we are trying not to forget that ill health or positive disease may be a logical cause where both child and parent are of course blameless, and that simple dietary errors may be the causative forces, which can not at all fall into the class of gross errors. Thus over feeding with milk is a natural mistake which a wise and conscientious mother may make without realizing the fact that milk, particularly for a child over a year of age, is a very filling and appetite-destroying food and one which does not in itself constitute a balanced diet. The quart a day slogan has probably been responsible for as many appetite failures as any other single factor. It should be taken as almost an absolute rule that any child who drinks well of milk and lacks appetite for other foods should have his milk allowance immediately restricted. With one girl of four years who came to my attention because of appetite failure, the simple limitation of her daily quota of milk to a pint was followed by a gain of two pounds in two weeks. Instances such as this are common experiences. Grosser errors in diet such as irregular meals, eating between meals, over-rich foods, constipating foods and too much sweet or starchy foods may also obviously exercise a deleterious effect upon appetite.

The importance of fatigue upon appetite has, I think, been greatly neglected. Fatigue, working alone or hand in hand with dietary errors and disciplinary faults is a factor the importance of which cannot be over estimated. Fatigue, in the modern racket of life, is a danger which always skirts the path of the child and is scarcely avoidable at times for the susceptible individual. We expect too much of our children; we drive them too hard and they drive themselves too hard. Even in play the possibility of fatigue is present, and disaster frequently awaits the highly toned child who forces himself to follow the leadership of older and stronger children.

In private school work one can almost invariably pick out in the fall the drawn faces and circled eyes, even if the weight record did not show it, of those children who had spent supposely health giving summers in the company of many other children at the shore, or at camps to whose curricula their strength was not adequate. I have in mind a boy who regularly gained in weight and appetite during the quiet summers spent with his family, and lost in both soon after school and town life were resumed. This year he was sent in the middle of winter to the country with a sensible nurse and a dog, and in three months time had gained ten pounds in weight and acquired an appetite which nothing seemed to satisfy.

These behavior abnormalities, of which appetite loss is only an example, are, in the final analysis, in our hands and we are responsible for them. Our children are only reacting to the environmental conditions which surround them. If a child is spoiled, someone has spoiled him; if he refuses to eat he has no appetite or hopes to gain something by not eating, and the reason for either deserves to be looked into.

Aldrich has classified the causes of poor appetite in children over one year of age, and except that he has not stressed fatigue, on which we have placed so much emphasis, this classification, which follows, is a good and a workable one.

I. Psychological causes:—A. In the child. a. Negativism. b. Desire for attention. c. Attempt to gain desires. d. Interest in other things. e. Desire to go out and play. f. Imitative nature.

B. In Attendants: a. Multiplicity of methods used. b. Too many attendants, each with a different method. c. Wrong methods in general psychologic handling. d. Lack of education or purpose—haphazard methods.

C. In the Technique of the Meal: a. Forced feeding. b. Over solicitous, hovering attitude. c. Too much talk about eating habits. d. Too much discipline, especially stressing of manners. e. Emotional strain at the table or before eating. f. Story telling or other stunts as a reward for eating. g. Unpleasant surroundings at meals. h. Too much time allowed at meals.

II. Physical causes: A. Disease Processes—a. Infections—practically all acute and chronic ones. b. Organic disease—especially of heart, lungs, and kidneys. c. Teething. d. Anemia. e. Disturbances of function—endocrine glands, coeliac disease, secretory and motor abnormalities of the stomach. f. Mental disease. g. Malignant tumors.

B. Hygienic Causes: a. Lack of fresh air. b. Lack of exercise. c. Lack of sunlight. d. Lack of sleep.

C. Dietary Causes: a. Over feeding—general or with any one food, as milk. b. Too short intervals between meals—eating between meals. c. Too much of foods rich in fats. d. Lack of vitamines. e. Food idiosyncrasy. f. Constipating diet. g. Too much sweet or starchy food.

It can readily be seen, with such a multiplicity of causes, how difficult it often is to analyze the cause of anorexia in a given case, and how important the history is. Obviously disease must be ruled out as a starting point and a careful inquiry must be made into the dietary habits, where so frequently part of the fault, at least, lies.

Generally, however, the main cause is almost immediately apparent, and further questioning brings out the detailed errors which have been permitted. Almost invariably the child is brought into the consulting room and while his listening ears prick up the story of his shortcomings is poured forth. As he hears that he cannot be made to eat a morsel of vegetables and that only with the utmost coaxing and the expenditure of an hour of time can he be forced to eat anything at all, he glows with pride and a feeling of importance surges up within him. What a little price is the loss of a few meals for such notoriety!

Frequently he has sat for meal after meal and listened to his parents' dietary comments until he, with true filial devotion, feels urged to pattern himself after them. Mother, restricting herself in calories, cannot eat bread or potatoes; father does not like carrots and never did; this, however, does not prevent him from urging them on his son and creating a storm when they are not eaten with alacrity.

Many children will not eat purely because that is what is desired of them. They are pronounced negativists and always want to do the opposite of what they are told to do. We are all of us negativistic to a certain extent, but as we grow older and wiser we do not allow it to interfere with our appreciation of food.

The usual story is that the less a child wishes to eat the more attention he gets and the more anxiety is expressed by his attendants concerning his failure to fall in with their dietary ideas. He is hovered over, he is fed by hand, he is amused, bribed and rewarded. Usually exactly the wrong methods are used in meeting this difficulty. Toys are piled upon the table, stories are told, mother weeps and nursie loudly proclaims her sorrow; one spoonful is coaxed in for the cook, one for the teddy bear and one for the man who tends the furnace until the little tyrant has the whole family racing around the ring and jumping through the hoops. If occasionally he consents to eat a little for recompense he thereafter has a club permanently to wield.

This sort of performance is not conducive to appetite stimulation, and neither is the forcing of food, overdiscipline at meal times, unpleasant surroundings or emotional strain. We have learned that appetite is a pleasurable sensation, aroused by pleasant memories associated with food, and obviously if a three ring circus with all the clowns at meal time cannot produce an ap-

petite for food, a meal fraught with unpleasant scenes can accomplish no more.

It should be almost unnecessary to remark that heaping a child's plate with all that he is supposed to eat for the entire meal, or with more than he can reasonably be expected to eat is to discourage him from the start. It takes determination on the part of anyone to sail into what is apparently going to be a big job. A child whose appetite is none too good at best is liable to quit before he has started when confronted with such a task.

It should be equally obvious, since we are trying to encourage appetite, that meals should be attractively and appetizingly prepared and served. The stoutest heart might falter on being confronted with a mountain of cold hash or a compost of bedraggled spinach. We recognize these facts in catering to our own appetites; why should we not accord our children the same consideration? It takes but a little extra care to prepare foods tastily, and to serve them daintily, and the results will well repay the effort.

Eating between meals is another definite cause of appetite loss, and a very common one. Even the generally accepted school lunch should be viewed with suspicion and should be curtailed or eliminated if there is any question as to the appetite for the meal following it. A few children seem unable to go the distance between breakfast and dinner without food, but I feel that the majority are better off if their eating is restricted to the orthodox three meals a day.

Our chief cause of criticism, however, pertains to the irregular, uncontrolled, and often unknown eating that goes on between meals, particularly of improper foods. There are few children old enough to articulate intelligibly who do not beg for ice cream cones when shopping with their mothers or taking the air with their nurses. Sometimes this pleading is successfully withstood; too often, I fear, the quickest way of quieting the child at the time is the slowest way of encouraging him to eat his supper that afternoon.

Any of these common causes of appetite deficiency may obtain in a given case, and often a number of them are working together to the child's detriment. The situation must be sized up as accurately as possible before a course of treatment is outlined, but this, in brief, usually consists of certain cardinal principles. One should always insist that a child eat alone, that a smaller amount of food than he customarily eats should be served him, that the food he most desires should be omitted or left to the last, and that a time limit be placed on his eating. At the end of the allotted time the table is cleared without comment, and no further food is forthcoming until the next meal. It is often of value, particularly with the negativistic child, to bring to his attention the fact that he eats too much. This may be somewhat of a shock to him, but he will try to live up to his reputation. I am frequently told that the starvation treatment has been tried for two or three days and abandoned because the child seemed to be losing weight. No results should be looked for inside of two or three weeks, and sometimes it takes longer—the less firm the mother or nurse the less satisfactory will be her results and the longer it will take to obtain them.

Generally the milk supply needs to be restricted, and sometimes in addition it is necessary partly to skim the milk. All food between meals is, interdicted, and the diet is made as simple and wholesome and of course, as attractive, otherwise, as possible.

It may be said as a general rule that tonics are valueless, although at the beginning of treatment iron and generally cod liver oil may be used.

After all is said and done the treatment of confirmed anorexia is difficult, but its difficulty is for the mother. The physician's greatest difficulty is to convince the mother that he is right and that his common sense methods are worth a consistent trial. Any mother who has seen her child continue to lose weight and persist in his hunger strike over a period of weeks should be convinced of the fact that an ounce of prevention is worth a pound of cure.

BIBLIOGRAPHY

1 Aldrich, C. A.: Cultivating the Child's Appetite. The Macmillan Co., 1927.
2 Shapiro, F.: Arch. Pediat., 44:175 (March) 1927.
3 Kerley, C. G.: Med. Clinics N. America, 1:505 (November) 1917.
4 Bartlett, W. M.: Am. J. Dis. Child., 35:26 (January) 1928.
5 Kerley, J. H.: Med. Rec., 97:786, May 8, 1920.
6 Porter, L.: Arch. Pediat., 42:1 (January) 1925.
7 Lowenburg, H.: Arch. Pediat., 43:503 (August) 1926.

ABDOMINAL CAESAREAN SECTION

BY REGINALD D. MARGESON, M.D., F.A.C.S.*

DURING the period from January 1, 1917, to January 1, 1929, 7779 women were delivered at the Boston City Hospital. Of this number 262, one in every 29.7 deliveries, or 3.3%, were delivered by abdominal caesarean section. 198 of these sections were performed by eleven members of the Visiting Staff, and 62 sections by twenty-six members of the House Staff. As two records are unavailable, 260 cases have been studied. There were nine deaths, a mortality of 3.4%.

The following table shows by year the total deliveries, total caesareans, deliveries per cae-

*For record and address of author see "This Week's Issue," page 1169.

sarean, and percentage of caesareans to total deliveries:

Year	Total deliveries	Total caesareans	Deliveries per caesarean	Percentage of caesareans to total deliveries
1917	249	5	49.8	2. %
1918	377	11	34.3	2.9%
1919	326	22	14.8	6.7%
1920	400	16	25.	4. %
1921	547	18	30.4	3.2%
1922	641	22	29.1	3.4%
1923	732	19	38.5	2.7%
1924	858	22	39.	2.5%
1925	583	17	34.3	2.9%
1926	639	22	29.	3.4%
1927	1023	45	22.7	4.4%
1928	1404	43	32.6	3. %
	7779	262	29.7	3.3%

Type of caesarean section performed:		Maternal mortality	
165	mid classical	5	2.4%
43	high classical	2	4.6%
10	Veit-Fromme-Hirst	0	
16	laparotrachelotomy	1	5.5%
26	transverse cervical	1	3.8%
260		9	3.4%

In one case, after a mid classical section, the uterus was removed because of fibroids, and an uneventful recovery followed. In three cases, postmortem caesarean sections were performed with two still-born babies and the other baby alive but dying later.

Indications for caesarean section:

63	high head
26	contracted pelvis
22	placenta praevia
12	eclamptic toxemia
1	toxic psychosis
91	previous caesarean section
11	previous operation (laparotomies and plastics)
5	heart disease
13	separated placenta
5	breech
3	transverse position
1	fibroid
1	chorea
2	Bandl's contraction ring
2	hydrocephalus
2	not given
260	

170 caesarean sections had been performed on 91 patients. In three cases there was rupture of caesarean scar, with baby free in the abdominal cavity. In two of these the uterus was removed, and both made uneventful recoveries. In the other case the rupture was closed, but patient died on the fourth day from general peritonitis.

1 case 1 previous caesarean, hysterectomy, lived.
1 case 2 previous caesareans, uterus sutured died.
1 case 5 previous caesareans, hysterectomy, lived.

Previous caesarean sections:

49	had	1	previous caesarean	section
19	"	2	previous caesarean	sections
14	"	3	"	"
5	"	4	"	"
3	"	5	"	"
1	"	6	"	"

Mortality:

1 high caesarean for toxemia, 3 days, of general peritonitis.
1 high caesarean for high head, 3 days, of general peritonitis.
1 mid caesarean for previous caesarean, 3 days, pneumonia.
1 mid caesarean for previous caesarean, 2 days, general peritonitis and hemorrhage.
1 mid caesarean for toxemia, 11 days, of pneumonia and sepsis.
1 mid caesarean for placenta praevia, 1 hour, of shock and hemorrhage.
1 mid caesarean for chorea, 12 hours, of shock.
1 laparotrachelotomy for uterine fixation, 3 days of general peritonitis.
1 transverse cervical for toxic psychosis, 30 hours of heart disease.

It will be noted that there were 22 cases of caesarean for placenta praevia, with but one death. The author's experience indicates that complete placenta praevia and marginal praevia in primiparae are better treated by the transverse cervical caesarean, with transfusion when necessary. With this method the mortality is lower than when delivery is from below.

Of the 13 toxemics delivered by caesarean, three died. The mortality is always high in caesarean sections performed for toxemia.

Postoperative infections:

1 arthritis
1 bronchitis
2 ischio rectal abscess (one previous to section)
1 laryngitis
1 pelvic abscess (colpotomy)
1 pelvic cellulitis
6 phlegmasia alba dolens 2.3%
1 pneumonia
1 pneumonia and empyema.
1 tonsillitis (three weeks after section)
18 uterine 7.1%
28 wound 11.1% (two were resutured)

Height of temperature:

98.6 to 100.4	126 cases	50.2%
100.4 to 101.4	63 cases	25.1%
101.4 to 102.4	33 cases	13.1%
102.4 to 103.4	17 cases	6.8%
103.4 or over	12 cases	4.8%
	251 cases	100. %

Pregnancy in which caesarean was performed:

Para	I	113
Para	II	53
Para	III	35
Para	IV	23
Para	V	12
Para	VI	9
Para	VII	6
Para	VIII	2
Para	IX	3
Para	X	1
Para	XI	2
Para	XIV	1

The following table is a yearly summary of all the caesarean sections:

Year	Total caesareans	Indication															Temperature					Type of Caesarean					Infection					
		High head	Contracted pelvis	Placenta praevia	Toxemia	Previous caesarean	Heart disease	Previous operation	Fibroid	Transverse position	Breech	Separated placenta	Hydrocephalus	Chorea	Contraction ring	Not given	98.6-100.4	100.4-101.4	101.4-102.4	102.4-103.4	103.4 or over	Mid classical	High classical	Veit-Fromme-Hirst	Laparotrachelotomy	Transverse cervical	Wound	Uterine	Phlebitis	Ruptured scar	Porrocaesarean	Deaths
1917	5	1		1		2		1									2	1		2		4	1				2					
1918	11	3	2		1	3	1				1						6	3	1		1	9	2				1	1				
1919	22	6	2	4		6	1	1	1	1							15	4	1	2		18	4				3	2			1	
*1920	16	7			1	4						1				1	5	5	3	1		13	1				3	1				
1921	18	4	3	2	3	4		1		1							6	6	3	1	1	9	8	1			1	1				1
1922	22	4	1	1	1	12					2				1		11	3	3	2		15	7				3	1	2			3
1923	19		1	2	1	8	2	1			1	2	1				6	6	2	3	2	14	5				4	1				
1924	22	2	3	2		8		4				3					7	7	5		2	16	3	2	1		5	2	1	1		1
1925	17	5			1	9						1	1				6	6	3	1		13	3	1			1	2	1			1
1926	22	7	2	2		10		1									15	3	4			16	2	3	1		2	2		1	1	
1927	45	15	3	5	1	15		1			1	3				1	24	12	4	2	3	24	5	2	11	3	1	2	1	1	1	
1928	43	9	9	3	4	10	1	1		1		3		1	1		23	7	4	3	3	14	2	1	3	23	2	3	1			3
Total	262	63	26	22	13	91	5	11	1	3	5	13	2	1	2	2	126	63	33	17	12	165	43	10	16	26	28	18	6	3	3	9

*Two records unavailable.

YEARLY SUMMARY OF MID CLASSICAL CAESAREAN SECTION

1917	4			1		2		1									2	1		1							1					
1918	9	3	2		1	2				1							6	1	1		1							1				
1919	18	5	1	2		6	1	1	1	1							11	4	1	2							3	2				
1920	13	6			1	4						1				1	5	4	3	1							3	1				
1921	9	3	2		2	1				1							4	2	2		1						1					
1922	15	2	1	1	1	8					2						6	2	3	2							2	1	2			2
1923	14		1	1	1	6	2	1				1	1				3	5	1	3	2						4	1				
1924	16	1	2	2		7		2				2					6	5	3		2						4	2				
1925	13	5				7						1					5	5	2								1	2	1			1
1926	16	4	2	2		8											13		3								1	2				
1927	24	4	1	2		13		1				3					13	6	2	1	2						1	1	1			
1928	14		1	2	2	5						2		1	1		7	3	2										1			2
Total	165	33	13	13	8	69	3	6	1	2	3	10	1	1	1	1	81	38	23	10	8						21	13	5			5

Transverse Cervical Caesarean Sections:

During the past two years, the author has been performing the transverse cervical caesarean section on all private cases, and has also had the opportunity of doing this operation on elev-

Patient voids or is catheterized.
1/150 of atropine is given subcutaneously.
Gas oxygen ether administered.
Abdomen painted with tincture of iodine, followed with 70% alcohol.
Patient placed in moderate Trendelenburg.

YEARLY SUMMARY OF HIGH CLASSICAL CAESAREAN SECTION

		Indication													Temperature					Infection			
Year	Total caesareans	High head	Contracted pelvis	Placenta praevia	Toxemia	Previous caesareans	Heart disease	Previous operation	Transverse position	Breech	Separated placenta	Hydrocephalus	Contraction ring	Not given	98.6-100.4	100.4-101.4	101.4-102.4	102.4-103.4	103.4 or over	Wound	Uterine	Phlebitis	Deaths
1917	1	1																1		1			
1918	2					1	1									2				1			
1919	4	1	1	2											4								
1920	1	1														1							
1921	8	1	1	2	1	2		1							1	4	1	1			1		1
1922	7	2				4						1			5	1				1			1
1923	5			1		2				1	1				3	1	1						
1924	3	1				1		1							1	1	1			1			
1925	3				1	2										1	1	1					
1926	2	1						1							1		1			1			
1927	5	2		1		1								1	4	1							
1928	2				1			1							1	1							
Total	43	10	2	6	3	13	1	4		1	1		1	1	20	13	5	3		5	1		2

YEARLY SUMMARY OF VEIT-FROMME-HIRST CAESAREAN SECTION

1921	1					1									1								
1924	2		1								1					1	1					1	
1925	1											1			1								
1926	3	1				2									1	2							
1927	2	1		1													1	1					
1928	1		1													1							
Total	10	2	2	1		3					1	1			3	4	2	1				1	

YEARLY SUMMARY OF LAPAROTRACHELOTOMY

1924	1							1															1
1926	1	1														1							
1927	11	7	1	1	1	1									5	4	1		1		1		
1928	3	2				1									2	1							
Total	16	10	1	1	1	2		1							7	6	1		1		1		1

YEARLY SUMMARY OF TRANSVERSE CERVICAL CAESAREAN SECTION

1927	3	1	1							1					2	1							
1928	23	7	7	1	1	4	1		1		1				13	1	2	3	3	2	3		1
Total	26	8	8	1	1	4	1		1	1	1				15	2	2	3	3	2	3		1

en cases in the series reported in this article. The technique is as follows:

A vaginal installation of three drams of 4% aqueous solution of mercurochrome on entrance to the hospital, which is repeated if the caesarean is not immediately performed.

The vulva, pubes, and upper thighs are sprayed with a 50% alcoholic solution of 15% acetone and 4% mercurochrome.

The abdomen is shaved, scrubbed with soap and water, followed by 70% alcohol.

1 c.c. of ergot given in thigh.

A mid-abdominal incision is made from umbilicus to pubes.

A five yard walling-off strip wet with normal warm saline is placed around uterus.

Bladder retracted.

1 c.c. pituitrin given in deltoid.

Transverse incision of bladder reflection.

Bladder separated from lower uterine segment, and, if infection is suspected, upper peritoneal flap is separated upward; these flaps are then

clamped to parietal peritoneum, thus making the operation entirely extra-peritoneal and preventing spill into the abdominal cavity.

Bladder retracted.

A transverse slightly elliptical incision is then made in lower segment (cervix), partially with scalpel and completed with bandage scissors or by separation with the fingers.

Retractor removed.

The vertex is delivered with forceps or shelved out with one hand and pressure on the fundus. Uterine flaps are grasped with six Allis forceps and No. 2 c.c.g. continuous suture is then started at one angle of incision. After several stitches have been taken, the placenta is expressed by Credé's method.

If there is considerable bleeding, another c.c. of pituitrin is given in the deltoid.

First suture is then completed, taking most of the uterine tissue.

Another layer of No. 2 c.c.g. continuous suture is placed carefully covering over the first row, and bringing over whatever vesico-uterine fascia is present.

If peritoneal flaps have been clamped, clamps are removed.

Bladder flap sutured with No. 2 c.c.g. continuous suture above cervical incision.

Weston strip removed.

Abdomen closed in layers without drainage.

This operation should take about thirty-five minutes. The non-contractile portion of the uterus is sutured; this is covered with bladder and peritoneum, thus making general peritoneal infection much less likely. The operation is more difficult than the classical caesarean section. It requires good team work, with the proper instruments. In cases that have not been in labor, it is a little more difficult and there may be a moderate amount of bleeding. This, however, is usually easily controlled.

After Care

For the first twenty-four hours, nothing but hot water by mouth, and patient should be kept comfortable with morphia. If unable to void after eighteen hours, should be catheterized. From twenty-four to seventy-two hours, liquids and soft solids if not vomiting or distended. After seventy-two hours, given house diet. Bowels are opened on the fourth day with milk and molasses enema, and are kept open with catharsis as necessary after the fourth day.

The series is too small to warrant absolute statements. However, the smoothness of the convalescence is particularly noticeable, the convalescence being more nearly that of a pelvic delivery. Seldom is there shock, distention, or vomiting. At the present time, it is impossible from this series to make statements about the scar in future pregnancies.

Cultures from the interior of the uterus in the eleven cases of the above series in two cases showed a growth, one that of staphylococcus aureus, the other staphylococcus aureus and bacilli coli communis. Both, however, made excellent recoveries. If virulent streptococci are introduced into the abdominal cavity in any laparatomy, the mortality will be high.

It is the author's firm opinion that this operation will reduce caesarean mortality, postoperative caesarean complications, and discomfitures.

POSSIBILITIES OF FAILURE IN THE REMOVAL OF STONES IN THE BILIARY TRACT

BY EDWARD L. YOUNG, JR., M.D., F.A.C.S.*

FOLLOWING operations on the biliary tract, it is a relatively common thing to have a recurrence of symptoms, even to the extent of severe biliary colic, for a certain length of time, after which nothing more is heard of the trouble. Graham believes, and it seems to me there is a great deal of evidence behind his opinion, that there is always in biliary tract disease an accompanying hepatitis, and that this hepatitis persists for some time after operation; that before it disappears, it may give the patient some very uncomfortable hours.

The following figures, based on the study of all the cases autopsied at the Massachusetts General Hospital in which there has been an operation on the biliary tract, seem to me to point very strongly to an additional cause for the recurrence of symptoms. In about 5000 autopsies there were 67 cases where death had followed an operation on the biliary tract. The figures on the 67 cases can be expressed in three ways:

In 27 or 40.3% of these, stones which had not been removed at operation, were found in the biliary tract at autopsy.

Stones were found at operation in 41 cases and in 24 of these, or 58.5%, stones were found post-mortem.

Stones were actually present in 44 of these patients and missed in 27, or a percentage of failure of 61.3%.

These figures alone sound startling and rather

*For record and address of author see "This Week's Issue," page 1169.

bad for the surgeon and because of this, a closer analysis was made, which does relieve the situation very considerably. Of the 3 cases in which the stones were entirely missed, one was a perforated gall bladder with a peritonitis, where the gall bladder was drained as rapidly as possible without any attempt at searching for stones other than the ones immediately encountered, in the hope that preliminary drainage would get the patient to the point where further operation might be undertaken safely. The second case was a difficult secondary operation in which only "many small, blackish-green concretions" were left in the gall bladder; these, if we read the record clearly, would in all probability either have come out in the drainage or made no serious trouble if the patient had lived. The third case was that of an acute gangrenous gall bladder in an old lady in poor general condition, where the surgeon said it was "deemed inadvisable to go far in exploration". It was again an attempt to tide the patient over the serious condition until something more could be undertaken, and here something would have had to have been done as there were three good-sized stones left behind.

A summary of the remaining 24 cases is as follows: There were 6 acute cases. These are always more difficult and carry a high risk, and the more tearing up of tissue there is, the greater the danger to the individual. Of these, 3 were in poor general condition, one with acute pancreatitis superimposed on the cholecystitis, one with perforated gall bladder with peritonitis, and one with a gangrenous gall bladder. In all of these some stones were found and removed, but it is entirely reasonable to feel, even in retrospect, that good judgment was exercised in not searching farther even though stones were left behind. The other 3 acute cases were apparently good surgical risks and were carefully searched for calculi. Two of these 3 had the common duct opened, probed, and washed out and yet in one there were 2 stones 1 cm. in diameter and in the other 6 stones were left. The third case had only very minute concretions left behind, apparently not important. In other words we only find 2 cases out of the 9 where, in spite of what looked like careful search, good-sized stones were missed.

Of the remaining 18 cases, 3 have been operated on before and, as every surgeon knows, secondary gall bladder operations are among the most difficult abdominal operations that we have to encounter. Of these 3 the first had stones in the fundus of the gall bladder and in the cystic duct, and at operation the common duct was opened and searched and then drained and yet three stones were left behind, all 1½ cm. in diameter, one in each hepatic duct and one in the common duct. The second was one of the very difficult operations. The surgeon at one time thought he was in the bowel and did not explore the ducts, as he had done as much as seemed possible, and in this case only "minute brownish, sandy concretions" were left. The third case was apparently a stone former, and the third and fourth operations were done at the Massachusetts General Hospital, the stones being each time apparently entirely removed, certainly as completely as possible; but at autopsy small concretions were found in the ducts extending well up into the biliary tract. In these three cases it seems to me only one need cause us real concern.

Three of the remaining 15 cases are of interest as we attempt to carry out the alibis. Two of them were considered poor risks to start with and in one an unexpected cancer was encountered so that no further search was carried out. The second had a sudden collapse on the operating table which stopped all further operating so that we cannot be sure that more complete search would not have revealed all of the stones. A third case recovered from the operation and went to a convalescent home, but began to have a little bother, was sent back to the hospital and died a month after operation of an embolus; the two stones that were found were surrounding two sutures which had been placed in the duct and probably represented secondary stone formation.

In the remaining 12 cases there is no chance for any real alibi as they were all chronic, all considered good surgical risks, and in only one was the operation reported as being technically difficult. There are a few facts in regard to these cases it is of interest to bring out. In 2 of the 12 a hard mass was felt, once in the duct itself and once in the head of the pancreas and in both instances the surgeon recorded his belief that he was dealing with a malignant condition and for that reason did not open the duct. In both of these the mass was the inflammatory reaction around the stone and no malignancy was present. In four of the cases there had never been any jaundice and that apparently influenced the surgeon (certainly in one case as he so recorded it), so that complete exploration of the ducts was not undertaken. The common duct was not opened and searched in 8 of these 12 cases, either for the cause just mentioned or some other not apparent. On the basis of the autopsy findings, it can be safely estimated that in 5 of these 12 cases the stones which were left behind were so small that they would, in all probability, have passed and 4 of these 5 were the ones where the common duct was opened and the largest stones removed. The fifth had a stone impacted in the cystic duct, which was probably the cause of the symptoms, and otherwise only "one minute blackish concretion in the common duct". In other words, where every possible effort had been made to remove stones, it would seem fair to say that the operation had been successful enough so that there was every reason to believe that the small concretions left behind would have been passed.

If a statement can be made on the basis of probabilities, only 11 of these cases had stones left behind which should have been found and which, having been missed, would surely lead to future trouble. On the basis of 67 cases operated, this is a percentage of error of only 16.4 and although this seems pretty high, it is much better than the figures previously given, particularly when we consider the technical difficulties involved in these cases.

In this series there were 9 cases where it is reasonable to believe that the stones left behind were so small that they would have been passed either immediately after operation in the drainage or later through the natural passage. It often happens in these cases that not only the common duct but also the opening into the duodenum is dilated and this may act for a time after operation as a safety valve in allowing the removal of small stones or small particles left behind. I believe this gives us one other answer for the recurrence of symptoms following operations on the biliary tract for the removal of stones.

Summary: Following operations on the biliary tract where calculi were present, the percentage of failure in the removal of these stones was from 16.4 to 61.3 depending on the optimism or the viewpoint of the surgeon.

In those cases which, because of good general condition, allow time to do everything necessary, the common duct should be opened and explored where there is any reason at all for believing there may be stones.

The absence of jaundice should never prevent thorough exploration of the common and hepatic ducts.

The recurrence of symptoms following operation may often be due to the passage of small concretions or fragments left behind.

PRESIDENT HOOVER AWARDS GORGAS ESSAY PRIZE

On May 23, 1929, President Hoover, at the Executive Offices of the White House, awarded the Charles R. Walgreen Prize of $500 for the best essay on "The Life and Achievements of William Crawford Gorgas and Their Relation to Our Health" to Gertrude Carter Stockard, Mountainburg, Crawford County, Arkansas.

The Essay Contest, conducted under the auspices of the Gorgas Memorial Institute, was nation wide in its scope, and participated in by one out of every 100 junior and senior high school students, and by 34 states of the Union.

The National Judges were Honorable William J. Cooper, U. S. Commissioner of Education; Surgeon General Hugh S. Cumming, U. S. Public Health Service; Dr. Franklin H. Martin, Chicago, President, American College of Surgeons.

Local high school winners were awarded a bronze Gorgas Medallion; and each state winner a cash prize of $20. Faculties of the High Schools were the judges in the local contests; state judges were State Commissioners of Health, State Superintendents of Schools, and Secretaries of State.

AWARDS

First Prize, $500 in cash and $250 travelling expenses to Gertrude Carter Stockard, Mountainburg, Crawford County, Arkansas; 2nd prize, $150 in cash, to Marguerite Hastings, Watertown, Middlesex County, Massachusetts; Honorable mention to William Gammage, Meridian, Mississippi; Alethea Whitney, Tampa, Florida; Eleanor Gilbert, Torrington, Connecticut.

PARTICIPANTS IN PRESENTATION CEREMONY

Presentation ceremony held at 12:45 noon, Thursday, May 23, Executive Offices, White House, Washington, D. C. President Hoover, Honorary President, Gorgas Memorial Institute, made the award; Charles R. Walgreen of Chicago, President of Walgreen Company Drug Stores, philanthropist, financed the essay contest and donated the prizes. Doctor Franklin H. Martin, Chicago, Chairman, Board of Directors Gorgas Memorial Institute; Dr. Cary T. Grayson, President, Gorgas Memorial Institute; Mrs. William Crawford Gorgas, widow of the great General Gorgas, whose humanitarian work of eradicating disease and prolonging life is being perpetuated through the Gorgas Memorial Institute; Henry S. Wellcome, London, England, Founder and Director, Wellcome Bureau of Scientific Research, Member of Board of Directors of Gorgas Memorial Institute and for many years a close friend of General Gorgas; U. S. Commissioner of Education, W. J. Cooper, and Surgeon General H. S. Cumming, U. S. Public Health Service.

OBJECTS OF THE GORGAS MEMORIAL

1. Eliminate unnecessary illness.
2. Prolong life, make it healthier, more productive, and enjoyable.
3. Check many diseases before they reach the incurable state.
4. Eradicate tropical diseases, open up territories of unlimited wealth and add enormously to the world's assets.
5. Eradicate pestiferous and disease-bearing mosquitoes (Malaria alone exacts an annual toll of $100,000,000).
6. Build up the 25,000,000 youths and adults in the United States now physically below par.
7. Lay the foundation for healthier future generations.
8. Have every individual submit to a periodic health examination by his family physician, who should be the custodian of health.
9. Prevent disease, and thereby—
   a. Relieve the nation of $1,500,000,000 of its annual sick bill.
   b. Prevent the present annual loss of 350,000,000 hours of time caused by preventable illness of 42,000,000 employes.
   c. Save the $3,000,000,000 lost annually through reduced earning power.
   d. Save 750,000 lives annually.
10. Bring about a liaison between the public and the scientific medical and dental professions, the real health authorities.
11. Free all the world from preventable disease, to which purpose the life of Gorgas was consecrated.

MASSACHUSETTS TUBERCULOSIS LEAGUE

VARIABILITY OF THE TUBERCLE BACILLUS*

BY S. A. PETROFF, PH.D.†

WITH the discovery of the human tubercle bacillus by Robert Koch in 1882, the missing link in the etiology of tuberculosis was added to the chain of observations made by various investigators since Laennec's time. The organism could be cultivated from tuberculous lesions and when inoculated into susceptible animals the disease could be duplicated. Suspected tuberculous material also could produce the same type of disease. This and other similar observations led Koch to form a postulate which at the beginning of bacteriology played an important part in stabilizing the reasoning of bacteriologists, and again, looking from another angle it has hindered the development of this new science by ignoring the possibilities of variations and mutation.

Naegeli, in 1877, five years preceding the discovery of the tubercle bacillus, noticed that cocci became rods and the rods cocci or spirilla. The colonies changed within twenty-four hours, the fermentation reaction was modified and the motility was lost and regained. Virulent organisms became avirulent and again virulent. Naegeli's investigations were attacked by everybody and his observations were considered the result of contaminated cultures.

The controversy of the two men developed two types of bacteriologists, one group which adhered to monomorphism, i.e., that an organism to be identified must fit a certain pattern, and another group which believed in pleomorphism, i.e., that no microörganism can remain stable in its cultural characteristics and virulence. The influence of the former view dominated the bacteriologists until a few years ago. With the accumulation of new experimental data on the variability of the microörganism, however, the theory of Microbic Dissociation has been brought out.

What is Microbic Dissociation? The simplest explanation is this: Microbic Dissociation is the process of variation in the offspring from the mother colony. Upon cultivation this variation can be demonstrated first by cultural characteristics. If we start with a colony having distinct cultural characteristics, upon subsequent cultivation there will be many variants from the mother colony. The two, or perhaps three, variants may differ from each other not only in colony structure, but also in tinctorial characteristics, virulence and other biological characteristics.

*Read before the Massachusetts Tuberculosis League April 22, 1929.

†For record and address of author see "This Week's Issue," page 1169.

The genesis of observations on Microbic Dissociation dates from the beginning of bacteriology. Transmissibility among the fission fungi and bacteria was well crystallized by Naegeli in his text book. The botanist, Cohn, attacked this view most vigorously. In attempting to classify systematically the bacterial species, he unconsciously joined himself to the group of men who believed in a fixed bacterial type, which was based on morphological and biochemical grounds. This conception had a great influence on Robert Koch, whose discoveries and observations and those of his pupils succeeded in forcing upon the bacteriological world a saner, and, I may say, a too sane view opposed to that of Naegeli and his colleagues. Gradually the view of a fixed type of bacteria of Cohn and Koch became established as a sort of dogma, recognizing for each bacterium one type of colony having a uniform morphology. The controversy was at its highest pitch in the eighties. Koch, and especially his pupil Migula, gave the iron rule of monomorphism, while a handful of men like Hueppe, Kruse and Gruber held tenaciously to the conception of bacterial pleomorphism but not to the extreme advocated by Naegeli.

At this time there appeared a very interesting monograph by K. B. Lehmann and Neumann on systematic bacteriology, describing the variability of the Pneumococcus, B. acidi lactici, B. lactic sporogenes, B. pyocyaneus fluorescens, and other organisms. Kossel and Kolle, Finkler, Prior, Shottelius and Dieudonné and others corroborated the view of variability.

The work of Neisser in 1906 and that of Massini in 1907 considerably stirred the turmoil already existing. These two investigators separated from the classical B. coli another type of a different cultural characteristic and called it B. coli *mutabile*. At first Kolle was not ready to accept the work of Neisser and Massini and branded it as contamination in cultures, but his pupil, Kowalenko, studying the same organism and using the single cell method of cultivation, was able to confirm Neisser's and Massini's observations.

Baerthlein's interesting observations, dealing with a vast amount of material on the study of colony variations and correlated features in fourteen common bacterial species, stand as a landmark prior to 1921. This author studied not only the variation in colony formations, but also the fermentation action, serum reaction, pigment production and virulence.

The activity at this time, 1906-1914, was

transferred to the English school, which became very adherent to the mutation phenomena.

The development of the theory of variability from the time of Neisser and Massini up to 1921, which marked the beginning of the present period, is rich with many observations which were interpreted differently but which, after close analysis, fit in very nicely with the present knowledge of Microbic Dissociation.

Arkwright, in England, recognizing the fundamental significance of Baerthlein's contribution, amplified the studies on B. coli with a series of well-controlled experiments, and Paul de Kruif, studying independently in this country with B. lepisepticum in rabbit septicemia, shared the honors for establishing the present conception of Microbic Dissociation. Fruitful investigations followed the work of these two men. In England, Griffith studied the pneumococcus, Cowan the streptococcus, Topley and Ayrton, and Goyle the B. enteritidis, and P. B. White, salmonella. In this country Webster continued the work of de Kruif with B. lepisepticum, Reimann and Amoss, Avery and Tillett studied the pneumococcus, Mellon, diphtheroids and other organisms, Soule, B. subtilis, Julianelle, the Friedlander bacillus, Faith Hadley, the streptococcus, P. Hadley, B. anthracis, diphtheria and many other organisms.*

From the preceding review we can clearly understand why progress in bacteriology has been hindered. The same view adopted by the old masters soon developed to the state of dogmatism and their authoritative statement could not be challenged. However, a few who had the courage of their convictions, have carried on the variability theory up to the present time.

With the discovery of the etiological factor in tuberculosis, it was hoped that a method of curing the disease was in sight. But I may state that not a single measure has come out of the laboratory in the past which in any way has directly helped the tuberculous patient. From time to time we hear of new discoveries of cures, but not one has stood the test. Sociological and preventive methods are still holding the front rank in the campaign against tuberculosis.

Wherein lies the fault? For some twenty years I have been studying and experimenting with the tubercle bacillus but it was not until three years ago that I came to the conclusion that we know very little about the organism which we have used so extensively in animals. Before entering into a discussion on the subject under consideration a brief review of the acid-fast organisms may help us to formulate a new hypothesis for further research in tuberculosis.

The discovery of the human tubercle bacillus was followed by the discovery of the smegma bacillus by Lustgarten in 1884, and the avian tubercle bacillus by Maffucci in 1890. Acid-fast organisms were found in fish by Dubard, Bataillon and Terre in 1897, and in 1898 Theobald Smith distinguished the bovine tubercle bacillus. In the ten years that followed, Moeller found the timothy grass bacillus, and Marpman, Beck, Petri, Rabinowitsch, Korn, Coggi, Tobler, Markl, Binot and others described and isolated various other organisms from butter, milk and other sources.

From this it can be seen that the acid-fast type of organism is well distributed in nature as a parasite and a saprophyte. It is present in the soil, in water, in plants and in humans, bovines, birds, etc. This wide distribution suggests the probability of a common ancestor and that the various biological characteristics and virulence have developed probably by the process of adaptation.

All the acid-fast organisms have been classified into three main groups, the first group comprising human, bovine and avian tubercle bacilli which are pathogenic for humans, bovines and birds, the second group which are pathogenic for reptiles, and the third group isolated from grasses and other sources of nature which possess no pathogenicity for humans or animals.

The classification of acid-fast organisms in regard to pathogenicity has been based on the following criteria: Development of growth at room or body temperature, rapidity of growth, and animal virulence. First, if the organism did not grow at room temperature, developing only at 37.5° C. and producing tuberculosis in guinea pigs and not in chickens or rabbits, it was classified as a human tubercle bacillus. Second, if the organism under consideration did not produce tuberculosis in guinea pigs, but developed extensive disease in rabbits and chickens, it was classified as the avian tubercle bacillus, and third, if it developed tuberculosis in guinea pigs and in rabbits but not in chickens, it was classified as the bovine tubercle bacillus. These have been the methods used for the last three decades and they must be modified if we are going to get anywhere.

Many acid-fast organisms have been discarded as non-pathogenic because they did not fall in the groups mentioned. Very often acid-fast organisms isolated from tuberculous lesions, behaving like the tubercle bacillus but failing to produce disease in rabbits, guinea pigs and chickens, were classified as non-pathogenic. We know very little of the evolution of the pathogenic tubercle bacillus and still less of the life cycle of the human tubercle bacillus.

The Johnè bacillus, an acid-fast organism associated with chronic enteritis in cattle and sheep, is very difficult to cultivate but it develops outside the body on media which contain a suspension of heat-killed timothy bacilli. This suggests the possibility that the two organisms have something in common, and that in all probability they are closely allied. We must not

*The above reference has been quoted from P. Hadley's recent monograph on Microbic Dissociation. For further details the reader is referred to the original paper. (Jour. Infect. Dis., 1927, 40, No. 1, p. 1.)

completely ignore the possibility of mutation which can be brought about by adaptation and environment.

The bovine tubercle bacillus, under ordinary methods of cultivation on egg media, does not vary in cultural characteristics from the human tubercle bacillus, but when it is cultivated on egg media containing 0.25% sodium taurocholate, the colony formation and consistency are identical with those observed in the avian tubercle bacillus. And again, the pathogenicity of the two is very much alike. Both are virulent for rabbits and hogs, differing only in that the bovine organism is not pathogenic for chickens, although some claim it to be, and, vice versa, the avian is not pathogenic for guinea pigs. The bovine tubercle bacillus can be pathogenic for humans but not to the same degree as the human tubercle bacillus. On the other hand, the avian tubercle bacillus is sometimes pathogenic for humans, as Loewenstein and others have isolated the organism from the kidney of patients with renal tuberculosis.

Recently L'Esperance has isolated acid-fast organisms from the lymph nodes in Hodgkin's disease. The organism behaved like the avian tubercle bacillus, was not pathogenic for guinea pigs but developed extensive disease in rabbits and chickens. The interesting point in her work is that guinea pigs, which are not susceptible to the avian tubercle bacillus, after a preliminary sensitization with heat-killed human tubercle bacilli could be readily infected with the avian tubercle bacillus. This again brings out the question of acquired susceptibility, which means adaptability and environment.

Many workers have observed instability of virulence in the tubercle bacillus. Coppen-Jones, Bruns, Maher, Löhnis, Sweany and others have studied the instability of the tubercle bacillus mainly from the morphological point of view. It is surprising that no one has made any attempt to determine the reason for this instability. For the last twenty years we have used the well known human culture H 37 for experimental infection and immunity. Up to several years ago the virulence of this organism was stable and apparently a small number of organisms was sufficient to produce progressive disease in guinea pigs. However, three or four years ago a diminution of the virulence was observed. In some cases we completely failed to infect animals with a heavy suspension. Similar observations with the organism were reported by other workers. The diminution in virulence occurred only when the organism was cultivated on veal broth with an acid reaction of pH 6.6. It did not occur on Proskauer and Beck's synthetic medium.

I may relate some observations made on the variation of cultural characteristics which led me to the study of dissociation of tubercle bacilli. When the tubercle bacillus is cultivated on liquid media, i.e., veal broth, synthetic or potato broth, the growth at first spreads out from the inoculum in a very thin, veil-like filament. In isolated areas the growth appears as small islands with a growth piling up different in structure from the interspaces. After some time this growth becomes more wrinkled and dry, not chromogenic and still white. As the culture becomes older, a creamy pigment develops, this pigment becoming darker and darker, gradually assuming a dark orange color. The pigmentation occurs chiefly in the middle of the colonies, while the periphery retains the white appearance. On broth cultures the pellicles sometimes spread considerably, are perfectly flat, not wrinkled and slightly moist, gradually becoming dry and wrinkled. When an attempt is made to remove the growth, some portions are very easily removed from the broth, and with others a whole mass is carried with the loop. The development is slow in some cultures and rapid in others.

Unquestionably everyone has had the experience of observing pleomorphism in tubercle bacilli under the microscope. Some individual cells may be long in one culture medium and upon cultivation on some unfavorable medium they may present short rods or they may be beaded. Sometimes one end of the bacterial cell is much thicker than the other, appearing club-shaped, and in many instances small or large granules develop.

The individual cells of the tubercle bacillus, and especially from the very young growths which radiate from the original inoculum, are very short, uniform and very sensitive to decolorization. As time passes the cells become pleomorphic and more granular, and still later they assume an almost coccoid form. In the study of the complement-fixation test we noticed that some cultures of tubercle bacilli never produced strong antigen and were anticomplementary, while the same organisms cultivated at a different time and on a different batch of medium yielded much better antigen. Very often in the preparation of various extracts from tubercle bacilli, a quantitative variation of various specific substances was noticed in different lots of bacilli. We always attributed these differences to the methods employed in separating them. Not until recently could we offer any other explanation.

The accumulated personal observations and the recent development of Microbic Dissociation in other organisms led us to apply this method in the study of the tubercle bacillus. The problem was very difficult to attack. Colony studies had to be made and for such purposes Petri dishes had to be used. Immediately we met with obstacles. It was almost impossible to cultivate the organism on Petri dishes without contaminations, regardless of the kind of medium used.

Four organisms have been studied: Human (H 37), Bovine (B 1), Avian and Bacillus Calmette-Guérin (B.C.G.) The greater part of

the study thus far has been concentrated on B.C.G.

DISSOCIATION OF THE BOVINE CULTURE

Two types of organism were dissociated from a bovine tubercle bacillus (B 1). In an early study we described the two colonies, one being round resembling a moth-ball and the other flat and spreading. The observations at that time were made on colonies on gentian-violet-egg medium. The structure of the colonies was not very constant. On subculturing variants developed from the two colonies.

Recently by modifying the culture medium, the colonies seem to be more stable. Sodium taurocholate added to the gentian-violet-egg medium in the proportion of 0.25% facilitates the differentiation of the two colonies. The S colony is perfectly round, moist and is easily emulsified; the R colony is flat, opaque and is not readily emulsified.

The S organism is highly virulent for guinea pigs. Only few bacilli are sufficient to produce progressive tuberculosis and death in guinea pigs. The R organism when inoculated subcutaneously into animals may lead to tuberculous changes but the lesions gradually heal.

DISSOCIATION OF THE AVIAN CULTURE

We have also been able to dissociate the avian tubercle bacillus. The colony characteristics of the avian tubercle bacillus were very similar to those of the bovine organism when cultivated on sodium taurocholate medium. The S colony was round, almost like the so-called moth ball and was easily emulsified, while the R colony was flat and in its early stages almost transparent, wrinkled and difficult to emulsify.

After keeping the two colonies under observation for a period of seven or eight months, we noticed a strict difference in the two types. The R colony assumed a perfectly smooth, flat appearance and remained so for a long time. Up to the present no variant has sprung from this colony. The S colony, after observation for the same period of time, assumed a whitish cream color, out of which sprung papillae. These papillae had a worm-like appearance and sprouted in all directions. In subcultures from the periphery of this colony, we obtained a colony with typical R characteristics, while the worm-like growth or moth-ball papillae revealed the typical S colony. There is also no question that the diffusible substance in the medium differs when these two distinct colonies are cultivated on fluid media. The pathogenesis experiments with these two colonies have not as yet been completed.

DISSOCIATION OF THE HUMAN TYPE (H 37)

An attempt was made to dissociate the human type of tubercle bacillus known as H 37. Mention has been made elsewhere that this organism had lost its virulence on some occasions during the last few years. The method employed with the two preceding organisms was used but the complete dissociation could not be accomplished. A difference was noticed in the colonies but the demarcation was not as distinct as with the other organisms. The structural character of the two colonies when studied was not stable and for that reason we devised a newer method which facilitated the dissociation of R and S. The main principle employed was that of cultivating the organism on fluid media having an acid reaction, as we remembered the loss of virulence observed in this organism occurred when it was cultivated on veal broth of an acid reaction. Synthetic fluid media was used for this dissociation. It was well buffered and the reaction was pH 6.6. The study has not yet been completed, but there are indications that this organism will dissociate like the avian and bovine tubercle bacilli.

DISSOCIATION OF BACILLUS CALMETTE-GUÉRIN (B.C.G.)

Our extensive study on dissociation of the tubercle bacillus was carried with B.C.G. cultures. The suspension from the original culture was prepared as stated above and inoculated on the surface of gentian-violet-egg plates, from which two distinct colonies were isolated. The R colony was very waxy with large, raised folds which were smooth on the surface. These folds started from the center of the colony and ran toward the periphery, sometimes in very irregular form. The center, in very young colonies, was cream color, but as the colonies aged they became a light orange color, then darker as they grew still older. The periphery was clean-cut, rounded, slightly raised and did not extend into the medium. This colony was very difficult to emulsify in salt solution of pH 7.2.

The staining reaction of the individual bacilli did not vary noticeably from that of other acid-fast organisms. Morphologically the rods were not very long and the majority of them were beaded. They grew well on glycerol beef broth and on Sauton's synthetic medium but multiplied with difficulty in an alkaline synthetic medium. It must be remembered that the reaction of the Sauton medium is pH 7.0-7.2, while that of Proskauer and Beck's synthetic medium is around 7.4-7.6. The former is not as well buffered as the latter. When an attempt was made to cultivate this colony continuously on Proskauer and Beck's synthetic medium, no growth took place after the second or third subcultures. Sauton medium with a pH of 6.4 appeared to be the most suitable for a favorable propagation of this colony. There was a usual lag of about seven days, after which the surface of the broth became pretty well covered with small islands which were uniform in size. This surface growth was heavy and raised, the

pellicles were wrinkled but not very coherent and were easily removed without dragging along the whole floating mass. The growth was also difficult to prepare in a finely divided, even suspension in saline having a pH of 7.2.

When a filtered suspension of the R colony was cultivated on slices of glycerol bile potato in Petri dishes, the colonies first appeared as small round pebbles, the surface of which was perfectly smooth, gradually increasing in size and reaching from 1-2 mm. in diameter. The surface of this colony remained perfectly smooth for the first month. After four to six weeks a small granular papilla appeared at the end of the smooth colony, and gradually this secondary growth covered the surface of the colony. At the second or third month several shoots of secondary papillae developed which were very coarse and granular in appearance. Eventually the original colony became replaced by an entirely new structure.

At the first and second stages of development when the colony was perfectly smooth, the organism was very readily emulsified but at the later stages it was almost impossible to emulsify it completely. We have not as yet completely studied these successive cycles in the development of the R colony when cultivated on glycerol bile potato.

Pathogenicity of the R Colony. The R colony was not pathogenic for guinea pigs and rabbits. By subcutaneous, intratesticular and intraocular inoculation, tubercles formed at the site of inoculation. The regional lymph nodes became enlarged in size and were palpable, but after two to four months they retrogressed and in many instances completely disappeared. On the other hand, if a suspension of R colony was inoculated either intravenously or intracardially, occasionally a mild progressive tuberculosis developed leading only occasionally to the death of the animal.

The S Colony. The cultural characteristics of the S colony on gentian-violet-egg medium differed from those of the R colony. There were many small, irregular wrinkles which were not smooth as in R and did not appear waxy. The center was considerably raised, gradually declining toward the periphery. The periphery was irregular, sometimes extending into the medium. On the whole, the growth appeared honeycombed. Morphologically, the bacillus of the S colony was a slender acid-fast rod and granules were not so common as with R. The bacilli were much more readily emulsified in salt solution of pH 7-7.2. They grew well on glycerol beef broth, Sauton's and developed best in media of an alkaline reaction. The maximum growth seemed to take place at pH of 7.6. When a comparison was made of the growth on fluid medium having a pH of 6.4 with that of pH 7.4, the amount was almost two-fold in the latter. The lag period was very short. When an attempt was made to cultivate this colony on glycerol bile potato medium, no visible colonies appeared. However, scrapings made from the surface of a 26 day bile potato plate and inoculated subcutaneously into a guinea pig and a small portion also planted on the surface of several gentian-violet-egg plates, revealed that the organism was still viable. The animal died in 15 days from an intercurrent disease but showed tuberculous lesions in the regional lymph nodes. Normal growth development of the suspected lesions took place on gentian-violet-egg plates. The culture was inoculated subcutaneously into two healthy guinea pigs, one of which died in 36 days with localized tuberculosis and the other in 152 days from generalized tuberculosis. Scrapings made on the 41st day from another bile potato plate were inoculated on the surface of gentian-violet-egg plates and subcutaneously into two guinea pigs. One animal killed at the tenth month revealed local abscesses at the site of inoculation and the lymph nodes were enlarged. Tuberculosis was present in the inguinal, iliac lymph nodes and in the spleen, and there were a few tubercles in the liver and in the lungs. There were eight colonies on one of the gentian-violet-egg plates inoculated with scrapings and twenty-five on the other plate. The cultural characteristics of the colonies were similar to those of the S colony. The results indicated that although there were no macroscopic S colonies on the glycerol bile potato, the organism had remained viable and capable of causing infection in guinea pigs.

Pathogenicity of the S Colony. No matter what route we chose for inoculation invariably this colony produced slow, progressive disease in guinea pigs, terminating in the majority of cases in the death of the animal. Occasionally disease was produced in rabbits, manifesting itself chiefly in the kidney, lungs and bones. However, when we chose the intravenous route for inoculation in rabbits, a progressive disease was more likely to take place occasionally.

REVERSIBILITY OF R (AVIRULENT) TO S (VIRULENT) ORGANISM

It has been observed by many investigators that the R cells of pathogenic bacteria cannot be mutated into the S cells outside the animal body by the ordinary methods of cultivation. However, such mutation can be accomplished in some instances by cultivating the R cells in media containing 5-10 per cent. homologous antiserum, i.e., serum produced by inoculating animals with R organisms. By such a method of cultivation Soule has been able to transmute the R into S in B. Subtilis, and Griffith, Dawson and Avery in the pneumococcus.

An attempt was made to follow this method in the cultivation of the B.C.G. "R" colony. If the R colony could be reversed into S by cultivation on its homologous antiserum and if the

cultures so obtained were virulent for guinea pigs, then the possibility of spontaneous tuberculosis and accidental contamination could be disregarded. The antiserum used in these studies was obtained from rabbits previously inoculated with a suspension of R colony, the technical details of which we shall omit for lack of time. The rabbit anti-R serum was added to Sauton's fluid medium to 10% and then seeded with a typical R colony. Transfers were made every week. Animal inoculations were made to test the virulence after the second, fourth, seventh, ninth, etc., transplants. Two guinea pigs were used for each experiment. At the time the animals were inoculated, a small amount of the growth was triturated, filtered and plated on gentian-violet-egg medium, the object being to compare the colony characteristics obtained after cultivation of the R organism in anti-R serum medium with those of the original culture. The results of this experiment proved conclusively that when the R or avirulent organism is cultivated in media containing homologous sera, it can be reverted into S or virulent organism after 8-10 passages.

SUMMARY

In summarizing the studies on Microbic Dissociation with the four organisms mentioned, we have been able to isolate from each culture two types of organisms. One we have designated as R and the other as S. The former possesses a distinct colony structure, develops best in acid media, grows in potato bile media and only occasionally produces progressive tuberculosis in guinea pigs. In the case of B.C.G., the lesions in the majority of instances have a tendency to heal. The S organism, on the other hand, differs from R in its colony structure, develops best in alkaline media, does not show any visible growths on potato bile media (B.C.G.) and is virulent for laboratory animals. The metabolic products of the two also differ to a great extent. It has also been pointed out that although the R colony is not virulent, by cultivation on homologous sera it may revert into S, the pathogenic form.

What is the significance of this observation on experimental investigations in tuberculosis? We can only speculate in regard to the practical application of this dissociation phenomenon. You are all acquainted with the tuberculin skin test. Very often a patient with extensive lesions fails to react to a fairly large dose of tuberculin and again a case with a minimal lesion may react to a much smaller dosage than the former. We have attributed this to the state of allergy of the patient. We prepare tuberculin and expect it to act as a shot-gun preparation for every case. It seems to me the fallacy has been that we have not studied the organism, which is the etiologic factor in tuberculosis, to any great extent.

Again for years we have studied the complement-fixation test in tuberculosis. We have noticed a difference in antigens. We have a certain group of cases with positive sputum giving a negative reaction and again a fairly large number of tuberculous individuals who should give a positive reaction but fail to do so.

Again, what is clinical activity in tuberculosis? We may have a patient at complete rest suddenly developing high fever and rapid pulse. This may continue for a few weeks, then drop to normal and remain there for some time, and again reach a high level. Why such oscillations in the activity of the disease? We must find an explanation for this.

Recent cultures of tubercle bacilli which we have isolated from patients revealed the two types of colonies. In some one form predominated, and vice versa. Can it be that the different types of the organism play some part in the disease activity? The organism is not stable outside the body and we know that it is not stable in the body. What governs this instability?

By the dissociation phenomenon we have been able to explain how Calmette reduced the virulence of the bovine culture to a lower level. Cultivating it on glycerol potato bile media, he allowed only the R avirulent colony to develop, incidentally carrying along some of the virulent elements. After long cultivation on media unfavorable for the development of S, the R colony predominated and now only few S organisms remain. This undissociated culture when inoculated into guinea pigs, produces, only on very rare occasions, progressive tuberculosis which may lead to the death of the animal. At the beginning of our studies we could not explain why the animals developed tuberculosis only seldom and we were ready to attribute it to spontaneous tuberculosis. However, by the method of dissociation we can offer a rational explanation, namely, that the guinea pigs dying of tuberculosis were inoculated with some S colonies.

The R colony is much more stable than the S outside the body. The S dissociates more readily into R and S, and the R, in turn, develops strictly R organisms. However, by proper manipulation of the culture medium we can revert the R into the S colony. If this can be accomplished outside the body by cultivation, we may assume that the same transformation may take place in the body. The human body receiving some of the B.C.G. "R" organisms naturally will develop anti-R sera. All the organisms are not destroyed, however, and those which escape destruction may grow in the presence of anti-R sera and develop into S. The process is very slow but eventually it may lead to a progressive disease.

This hypothesis is based on observations in guinea pigs inoculated with B.C.G. which have

become skin hypersensitive. After five to six months the skin hypersensitiveness drops to almost zero but if the guinea pigs are kept under observation for a year or a year and a half, the skin hypersensitiveness may return due to progressive disease.

THE TEN YEAR PROGRAM FOR CHILDREN—PROGRESS AND PLANS

BY HENRY D. CHADWICK, M.D.*

SINCE 1924 when the plan was first put into operation approximately 100,000 children have been examined in Massachusetts. We have learned many things as a result of these examinations. Records have been carefully kept and analyses have been made of the figures in many thousand of cases.

We have learned that infection with the tubercle bacillus is not as common as we thought it was. Whether it was ever as common in the United States as in Europe is an open question.

We find in analyzing our figures that when children begin school life 20% are infected, i.e., at the age of five, at age ten they are infected to about 28% and at fifteen years they are infected to about 35%. Roughly there is one point increase of infection with each year of life from five to fifteen. It would be interesting if we could go on and get some figures above that age. We have, however, some information which leads us to believe that even adults of this present generation are not universally infected. Formerly we did not test adults for infection. This year we have tested and examined about one hundred. Nurses and teachers and I find that only 50% show infection. In my opinion where tuberculosis is suspected but not evident in adults we should give the tuberculin test just as we do to children. If we can rule out tuberculosis in 50% it is indeed very much worthwhile.

We have learned that children are infected with the tubercle bacillus to the same degree regardless of nutrition or nationality if they are exposed to an open case of tuberculosis. 50% of children who were said to be contacts reacted to the tuberculin test. We may wonder why more than 50% of the contacts were not infected. I think these figures are somewhat unreliable because some of the histories are incorrect and may show the children to be contacts when as a matter of fact the exposure has been nil or very slight and would not afford opportunity for infection. Children for instance who have been exposed to a case of bone or hilum tuberculosis have been reported as contacts. My opinion is that when there is definite contact with pulmonary tuberculosis children are almost always infected.

I was talking with Dr. Walter Rathbun a short time ago. After checking up the results of his investigations in Chautauqua County he finds, and my experience coincides with his, that children with extensive tracheo bronchial glands and calcified nodules in the lungs often develop the adult pulmonary type of disease a few years later. By these x-ray examinations it is fair to say that we can pick out the 10% of the children who will in the next decade produce 50% or more of the tuberculosis cases that occur in adolescence and early adult life.

We have also discovered by use of the tuberculin test that only about one-third of the diseased cervical glands are tuberculous. These are some of the things that we have learned from a study of the children examined in these clinics.

Our clinic plans for the future have been changed because of the knowledge we have gained in the past five years. We propose beginning next year to reverse our procedure. First the tuberculin test will be given to the children. All reactors will be x-rayed. Those showing evidence of tuberculosis or other pulmonary conditions in the x-ray film will be examined by one of our physicians. A careful history will then be secured and by having before him the results of the tuberculin test, x-ray and physical examination he will be able to make an accurate diagnosis of the case and advise the parents to consult the physician as to treatment.

The plan was tested out at East Longmeadow, Massachusetts. The nurses of the Hampden County Tuberculosis and Public Health Association went to the schools and gave talks to the children in the classrooms. We secured splendid co-öperation from the health and school departments. The teachers sent out the consent blanks to the parents by the children. When the reply was negative, the nurses and teachers made an effort to get them to change their minds. About 80% of the parents consented. Later Dr. Wakefield and Dr. Chase gave the Pirquet test to 430 children in three different schools during the morning session. This shows how rapidly the work can be done when properly organized. Three days later one physician in three hours saw all the children except the absent ones and recorded the result of the tests. An x-ray technician was later sent to x-ray the children who were positive reactors. The x-rays were then interpreted and a careful physical examination will be made of those children who show any evidence of disease in their films. The mother should come with her child so that the physician can advise her directly as to the condition found

*For record and address of author see "This Week's Issue," page 1169.

and as to the necessity of treatment and removal of defects.

This is the procedure we hope to carry out next year. It saves a large amount of work which the school nurse has had to do. In the past the local nurse has had to go into the homes and get the histories from the parents. This has been a tremendous task especially in towns where there is only one nurse for about two or three thousand children. By using the method described above we are able to do twice as many children in one year with a smaller staff. This will mean cutting in half the cost per child of the work of the examination.

The program will be more definitely one for finding tuberculosis. We will not be able to list children who have enlarged tonsils, decayed teeth and heart disease in the negative cases as has been done in the past. We will find however more cases of tuberculosis because we are examining twice as many children and this is primarily our function.

The League is sponsoring the examination of a large number of women in industry. We would suggest that this survey be carried out in the same manner, i.e., first the tuberculin test then the x-ray if the reaction is positive and then examine those who show any pathological changes in the lungs. The early cases of pulmonary tuberculosis are missed if only a physical examination is given. Slight physical signs are difficult to demonstrate while the x-ray will show very early changes due to tuberculosis. An effort should be made to secure the examination of 100% of the employees in a given industry. If the examination is optional the 15 or 20% that refuse to be examined will be the group that will show the most tuberculosis. Those who need the examination most will hesitate to have it because they fear that there is something wrong and they do not have the courage to face it. Arrangements should be made with the employers to get all of the employees examined otherwise the results will not be conclusive as showing the actual amount of tuberculosis that exists.

Sometimes we wonder if all this clinical work is worthwhile. Checking up the death rates we find that in 1898 there were 280 deaths per 100,000; in 1908 there were 210 deaths per 100,000; in 1918, 146 per 100,000 and in 1928 73 deaths per 100,000. From 1898 to 1908 the reduction was one-quarter, from 1908 to 1918 the reduction was one-third and from 1918 to 1928 the reduction was one-half. What of the next ten years? Some people have said that it will be more difficult to bring about a reduction in the tuberculosis mortality in the future than it has been in the past. They have prophesied a slowing up of the decline in death rate. I do not agree with this view. As our efforts are intensified, especially with the children, I am very optimistic and expect that the decline in the death rate for tuberculosis will be fully as rapid in the next decade.

If this prophecy is correct, in 1938 the death rate for all forms of tuberculosis in Massachusetts should be under 40 per 100,000.

REPORT OF EXECUTIVE SECRETARY, APRIL 22, 1929

FRANK KIERNAN*

THE report of your Executive Secretary will as in previous years refer to the following general subjects: Finance, Administration, Field Work, Legislation, Health Education and Allied Activities. An added item this year will be a statement of some problems with which the League Office is confronted.

FINANCES

With respect to finances the League has lived within the budget approved by the Budget Committee and adopted by the Board of Directors at the Semi-Annual Meeting.

We have added to our sinking fund $1,000. The Executive Committee is disposed to add something to this fund each year so as to be able to meet the possible contingency of a disaster or lean years when funds from the Seal Sale would not be sufficient to meet our requirements.

The President has referred to the increase in Seal Sale returns this year in the Commonwealth in the face of a falling off in the Nation at large. Be it said to the credit of the Affiliated Organizations that it was only by the most heroic efforts that we were able to make an advance in the face of most discouraging conditions in many localities.

ADMINISTRATION

The League Office has continued in its customary location with an ever increasing number of visitors from our own Commonwealth and surprisingly large numbers from other States. It is also interesting to note that the National Tuberculosis Association is referring people from other parts of the country to us for literature which we have produced and special services we can render.

The League Staff has continued without enlargement during the year. Just how we are able to continue with the same personnel and do a considerable larger volume of work each year is something that cannot be explained on

*For record and address of author see "This Week's Issue," page 1169.

any other basis than that the League workers are taxing themselves more and more each year to carry the burden. I must confess that the conscience of the Executive Secretary smites him for the unreasonable demands he makes upon the members of the staff and I hope in the next year we will correct this somehow.

The *Health Journal* continues to be published quarterly, we hope with improved quality. We are not endeavoring to enlarge the circulation because of our limited funds but we are constantly revising the lists so that the number of copies will be used to the best advantage.

The Early Diagnosis Campaign of the National Tuberculosis Association has placed upon our staff an additional burden which they are meeting with their customary promptness and efficiency.

FIELD WORK

Your Executive Secretary in the course of the year visited all the Affiliated Organizations either by actually going to their offices or conferring with their officials and Executive Secretaries at League headquarters or in conferences.

The customary group conferences have been held during the year at Springfield and Boston for discussion of the Seal Sale plans and at Worcester for discussion of problems in connection with summer health camps.

Service has been rendered to all the Affiliated Organizations in a variety of ways, some of which are advice and help on financial operations, discussion of programs of work, increased Seal Sale activities, securing workers, camp personnel and kindred activities.

The piece of work which seems to the Executive Secretary to be the most promising that we have outlined and on which we have begun is the organization of examinations of young women in industry. This is a joint project on which the State Department of Public Health, the Boston Tuberculosis Association and the League are now working. We expect to examine upwards of 5,000 industrial workers this summer with a view to determining the incidence of tuberculosis in this group. The ages of those examined will be between 15 and 25. The examining service will be furnished by the State Department of Public Health and the organization and contacts with industries and the expenses incident to the study will be defrayed jointly by the Boston Tuberculosis Association and the State League. We hope at the next Annual Meeting or perhaps sooner to make a report on the findings of this project. The National Tuberculosis Association has expressed its interest in it and we expect it will be a substantial contribution to determining the extent of tuberculosis in industrial life about which there is at present only meager information.

Hampden County is planning a similar project and it may be that the findings of both undertakings may be brought together and a joint report published on the subject.

If time permitted I would be glad, as I did in previous years, to give you a somewhat detailed account of the notable progress made by the Affiliated Organizations during the past year. Those of you who are connected with the Associations know the details of the Affiliated Organizations' work and the others who are here will take my word for it. I am sure that there is not an Association in the Commonwealth that has not seriously attempted to better its work and devised short-cuts for accomplishing results conserving their funds thereby and making it possible for them to enlarge their programs. I would say in general that the Executive Secretary of the League is frequently told by State Health officials and representatives of other social service organizations that the Affiliated Organizations of the League by themselves and combined as an affiliated body stand out conspicuously in the Commonwealth as a well-developed group of organizations doing an advanced piece of public health work.

LEGISLATION

The arrangement which has been in operation in previous years whereby we have supported legislation recommended by the State Department of Public Health and opposed that which the State Department considers undesirable has been continued.

We added the weight of our organization and many of its people who came out to oppose the Chiropractic Bill which is still pending in the General Court.

We also assisted in securing the legislation to abolish the common drinking cup and common towel in industrial plants.

We secured the assistance of a number of Affiliated Organizations in furthering the interests of the Pasteurization Bill introduced at the instance of the State Department of Public Health.

We offered our services in endeavoring to retrieve the Vaccination Bill from impending disaster after it had successfully weathered the storm of the House and the Senate but through some manipulation we are not conversant with this meritorious Bill was ditched at the last moment and has to be brought up anew next year.

HEALTH EDUCATION

You have heard from our Educational Secretary report of progress of that work during the past year. Let me say what I said in previous years that something around $10,000 of our total revenue of $25,000 is spent in health education work by the League and goes directly back to Affiliated Organizations in terms of personal service and supplies for health education.

This company will also be interested to know that our former Health Education worker, now

Mrs. William Harris, Jr., is happily located at Hartford, Connecticut, and when she comes to Boston favors the League with a visit.

ALLIED EFFORTS

Your Secretary attended the National Association Annual Meeting of 1928 and read a paper on "Programs of Local Work" and also read a paper prepared by Dr. John B. Hawes, 2nd, on "Tuberculosis As An Industrial Accident".

Your Secretary was elected Secretary and Treasurer of the Massachusetts Central Health Council and also Chairman of the Publicity Group of the Boston Council of Social Agencies.

At the invitation of the American Public Health Association your Secretary participated in a conference in New York at which plans were developed for discussion of public health on Chautauqua programs throughout the country during the summer. This project was successfully carried out.

Your Secretary induced the other State Secretaries of New England to take up the Health Playwriting Contest for High Schools. Therefore in addition to the Massachusetts Contest conducted by our Educational Department we have had the Contest in which other New England States participated and as a result of which the New England Prize-winning Plays selected by the Judges were from Manchester, New Hampshire, West Warwick, Rhode Island and Concord, Massachusetts. These three plays will be produced at the Copley Theatre on May 3rd on which occasion the prizes will be awarded by Mr. E. E. Clive, Managing Director of the Theatre and Chairman of the Board of Judges.

This report should include reference to the adjudication of the dispute with the Tuberculosis Committee in the City of Waltham which has happily been terminated. Through the efforts of our former President, Dr. Kendall Emerson, and Officers and Executive Secretary of the Southern Middlesex Health Association an adjustment of the difficulties has been made and the 1928 Seal Sale in Waltham surpassed that of all previous years.

Your Secretary has been appointed a member of an Executive Committee of the Boston Council of Social Agencies to assist in securing the National Conference of Social Work for Boston in 1930.

Your Secretary has been appointed by the President of the National Conference of State Tuberculosis Secretaries a member of the National Committee on Publicity and Publications and in that capacity has served in planning Early Diagnosis Campaigns.

PROBLEM

We are confronted with a serious problem in the League Office because of the growing amount of work and our limited personnel and space. I can see the time within the next year when it will be necessary for us if we are to handle our business with the promptness and thoroughness of the past to secure an additional office worker and an additional room. The necessity for the additional room is especially urgent so as to provide proper quarters for the carrying on of the health education work of the League.

FINALLY

I desire to thank the Directors, the Officers, especially the President, the Executive Committee and the Secretaries of our Affiliated Organizations for their cordial and always helpful co-öperation during the past year. It is an inspiration for better work to be associated with a group that not only appreciates service rendered but is also willing to understand that when service asked for cannot be rendered immediately there is patience and good will pending performance.

REPORT OF THE EDUCATIONAL SECRETARY, 1929

MISS JEAN V. LATIMER*

WITH the shift in emphasis in the public health movement from cure to prevention naturally the development of individual habits of personal hygiene must receive attention. This emphasis has brought to the public health movement an involved task, for no longer are we dealing solely with compulsion and laws regarding public health and sanitation, but we are concerned with the individual's most private life. To realize our goal we must turn our attention to the child, since childhood is the golden age for habit formation. To quote our own State Commissioner of Health, Dr. Bigelow, "We are asking ourselves if the exuberant attention which we are now giving to the child is not evidence of our second childhood of public health. If so, the records of the first childhood are well lost in obscurity, since for so many years we neglected the child. This preventive work among children takes many forms: the detection and correction of defects, nutrition, posture, prenatal and infant supervision, active immunizations, mental and dental hygiene, etc. This is all aided by a host of clinics, extra diets, exercise, supervised play, rest, and what not. It is to our credit that the child has an especial appeal and thus this work is being more and more extensively undertaken."

*For record and address of author see "This Week's Issue," page 1169.

In order to prevent tuberculosis more than twelve years ago the National Association felt it wise to inaugurate a program of health education for children, known as the Modern Health Crusade. This program was based on the following scientific facts: That human beings become infected during their early childhood; that children kept in proper physical condition are less liable to become diseased, or as is generally said, they acquire an increased resistance; and that the conditions which lower vitality are generally said to impair resistance and predispose the development of tuberculosis as a disease. Consequently, in any plan of health education to prevent tuberculosis, it was necessary to enter into the entire field of health so as to train the child to acquire health habits which would keep him in the best condition possible. Such education would be a material factor in reducing the number of individuals who would develop tuberculosis in adult life.

Thus, the health education program of the League has been based largely on the assumption that health habits can most effectively be taught to children and, second, that the school is one of the most efficient organizations for developing in the child these desirable health habits, attitudes, and health knowledge. The school is the one community agency which at one time or another reaches all the children. Again, the school is the medium through which the child passes from parental controls of the home to social controls of the community. Already a few of our more progressive school systems have demonstrated the fact that the grade teacher can with many advantages be made the center of the health activities of the child, and that in a modern elementary school health activities can be conducted as a regular part of the daily school program,—the objective of health education being the sharing with the home the responsibility for the health of the child. Recent child psychology has experimentally demonstrated that children can be better trained in groups than individually. Group influence or class morale is present even among pre-school children, this being one psychological basis for the development of the nursery schools. Possibly no other person concerned with the life of the child, is so skilled in the understanding of the application of educational principles of modern child psychology as is the teacher. The class group can be made not only an important agency for encouraging the child to higher health achievements, but it can be made a potent influence in arousing the child to a community of civic pride in health achievement.

Ten months ago when I assumed the position as Educational Secretary of the League I found many significant signs of life and real vitality in the school health work throughout the State, —evidences of the already splendid pioneer work accomplished by the educational services of the League under the remarkable leadership of my predecessor. With the co-öperation of the Executive Secretary, with his unusual administrative insight and foresight, we have been able to continue to carry on along the lines already begun and to extend the work. There are possibly few communities in Massachusetts which have needed the initial stimulation in health education, but they have been and are still looking to us for practical, definite suggestions as to how they may actually develop health education procedure, which may bring about improved health conditions among the school children. Health education, as stated, is the first objective of the National Educational Association and certainly in Massachusetts I feel that this objective is recognized. However, it is easier to formulate educational objectives than to develop educational practices which cause desirable health habits to function in the daily lives of the school children. At present we are still far from the realization of our goal, for school health education is possibly not even in a controlled experimental stage but in a loosely organized flux,—and whether or not it becomes intergraded into the daily life of the school and becomes permanent depends largely on the efficiency of the pioneer work which is now being carried on. Teachers still need much actual guidance and detailed assistance as well as concrete materials as to how to carry on health work suited to the age level of their children. It is here that the Educational Department of the League has been able to render much detailed service.

FIELD WORK

The Secretaries of our local affiliated public health organizations have for some years been alive to the educational possibilities of service to the school people of their communities. The fact that they have been able to secure the official co-öperation of school superintendents for calling together teachers and school nurses for meetings to discuss the topic of health education is evidence of the confidence which they have established, and also demonstrates the fact that school people are looking to us not only for inspiration but for actual guidance. Practically all the counties in the State have been visited at least once and in many instances several times during the past winter by the Educational Secretary. Her visits have come through invitations from local people and have been spent in giving talks before groups of teachers, in visiting school rooms in order to assist the teacher in health instruction of her pupils, in addressing high school assemblies, in personally interviewing school administrators, in individual and group conferences with school nurses and public health workers, and in the supervision of the special health workers employed by some of our associations.

Thus, significant is the development which is taking place among some of our local public health associations in that they are assuming

more leadership in the direction of health education. In some instances the type of educational work is intensive rather than extensive and is taking the form of a demonstration of actual health teaching. Several of the associations are now employing a full time health education worker with whom it has been the privilege of the Educational Secretary to co-öperate and plan for a localized program of health education. Many of our associations are personally distributing a large amount of health education literature and material. Also, I can report that two of our associations are issuing health publications of their own. Especially gratifying to the Educational Secretary have been the contacts with the smaller rural schools throughout the State,—schools so isolated that possibly few other State agencies are reaching them. Also, we have been gratified at the interest and coöperation which we have been able to establish in some of our larger public school systems. In many instances official meetings have been called by the superintendents in order that the teachers might hear the Educational Secretary. In one of the larger cities it has been the privilege of the League, with the co-öperation of the State Division of Child Hygiene, to plan a course of six lectures in health education for teachers and school nurses. The course was conducted under the auspices of the local association and has just been concluded with an average attendance of over one hundred.

PAROCHIAL ACTIVITIES

Much interest and real co-öperation has been received from the parochial schools. Especially active have been the parochial schools in the Diocese of Boston, of which Father Richard J. Quinlan is the head. Last summer health education received an important emphasis in their summer teachers' institute, in connection with which the Boston Association conducted a splendid health education exhibit. During the fall months quite a large part of the time of the Educational Secretary was given to a series of group meetings with parochial sisters in various parts of the State. In one instance about 150 sisters came from thirty or forty miles distance for the meeting. We have found the sisters most eager to receive all the material which we have been able to distribute to them. In many of the parochial schools the complete set of health lesson plans distributed by the League for the various grades have been initiated and are now in use. Two of our local associations are conducting an intensive piece of health education work in the parochial schools. Some of the most progressive of our health teaching during the past winter has been undertaken by the sisters, under the supervision of the special health workers employed by tuberculosis associations. Again, this year the parochial schools were represented in our Health Playwriting Contest.

DEFINITE HEALTH PROJECTS

While the subject of health education is to us a very real one, we realize that to the general public it is still vague and indefinite, and for that reason certain definite health projects are valuable. The two concrete projects which have been developed by the Educational Department of the League for the past winter have been the Health Playwriting Contest for the High Schools and the Teachers' Scholarship Contest. We are pleased to report that the Fifth Massachusetts Health Playwriting Contest has just closed and that more interest and better educational results have been evidenced this year than before. Moreover, from a geographical standpoint the interest in the Contest has extended. Twenty-five plays were submitted from various parts of the State including two from the Cape, three from Franklin County, and one from Hampden County. The New England Health Playwriting Contest, conducted by the Executive Secretary of the League, has also for the first time been successfully initiated this year. The three plays chosen by the New England judges will be presented at the Copley Theatre on May the 3rd. Early in the fall it was voted by the Executive Committee of the League to extend the Teachers' Scholarship Contest to include two given for High School teachers of Hygiene,—in order to promote a more adequate type of subject matter teaching along the lines of positive health. Much concern has been demonstrated in this Contest and already about twenty teachers have enrolled, each agreeing to develop an experimental piece of health education work for a period of at least four months, the work to be directed and supervised by the Educational Secretary of the League. This has given us an opportunity to encourage the individual teacher's own initiative and to bring to her concrete suggestions as to how she may develop a more coördinate daily health program. It has been gratifying to us to find so many of these teachers in some of our most isolated rural districts, visits with whom the Educational Secretary considers among the rare privileges of her work.

OFFICE ACTIVITIES

The League's informational and health service has been increased. Our material has been called for not only by local people but by other States and even other countries. We have even received certain inquiries from a State in which everything is supposed to grow better than in any other,—California. Again, Nebraska sends us a letter, "Help us out here in the prairies where we are just beginning health education", and Maine sends us this letter, "Can't your concrete suggestions to teachers on health education be made to include our public health people and teachers down here in Maine?" Many inquiries have also come to us from students in our teacher training institutions, and we are gratified to re-

port some official contact with our normal schools. Several thousand of the series of graded health lesson plans for grades 1 through 7 have been distributed to the schools of Massachusetts by the League during the past year. Our *Bulletin* has met with a sympathetic reception, and there have been many evidences sent in to us that even the last page of it has been read. The circulation, which has always been personal rather than casual, has been increased two hundred in number. We have attempted to develop one health idea each month and to make this the theme of our *Bulletin*. For example, the January issue was on the common cold and ventilation, March on the correction of physical defects, and the present number is on May Day suggestions. In this magazine we do not theorize in regard to health, but we offer concrete educational procedure as aids to teachers and school nurses. Not only have we distributed material which we ourselves have developed but we have become a clearing house for material which is available throughout the country. It has been our privilege to make known to teachers and school nurses the best of what is coming out through the medium of one page of announcements in the monthly *Bulletin*. Also, our library has increased not only in volume but in circulation. In some instances principals and superintendents have written to us for examination and recommendation of the best health education texts which are now being published. Last fall we conducted a health education exhibit in connection with the various county fairs and also at the county teachers' conventions. These exhibits proved a most efficient channel for making known to the public what we had to offer in health education materials. We are constantly receiving requests from people who learned about us first through these exhibits.

OUR FUTURE NEEDS

As to future needs we still realize that there is much to be done and that as yet health education is still in an uncertain stage in our schools. There is great need of showing teachers how actually to carry on health education and how, through real correlation of subject matter, health may become a regular part of the daily school day. Again, the teacher's knowledge of the technique of habit training must be strengthened and increased. Some teachers are making great strides here and others are failing. The permanent success of the school health movement will be in no small degree measured by the quality of the assistance to be rendered in the immediate future by voluntary and official public health organizations. This is our challenge. Another future need is for establishing more educational co-öperation with the home, since no program of health education will be complete which leaves out the home. Especially is there need of health instruction and habit training among the foreign-born citizens,—not only from the adult standpoint but because of the fact that otherwise all health instruction given to children outside the home is likely to be impracticable. In raising the health standards of the child some similar attention must be given to the home in which he must continue to spend a large part of his time. Closer co-öperation with the Americanization groups and the parent-teachers' associations will possibly give us our opportunity here.

Again, the high school at present represents the neglected field in health education. Less attention is being given to the health of the individual students and less is being done in the way of health teaching and in inculcating standards for health behavior in the high schools than in the elementary schools. The age group in which the students fall is a critical one from the standpoint of health and there is evidence that for tuberculosis workers in particular this age represents a weak point in their campaign. This has been called to our attention by the Statistical and Educational Departments of our National Association. Educational groups are also concerned with this problem but as yet successful methods and techniques are undeveloped. It is generally conceded that an extension of the same type of program which has proven successful in the elementary schools is not what is needed.

An initial step has been taken in the appointment by the President of the League of an Advisory Health Committee composed not only of public health authorities but school administrators themselves. Two meetings of this Committee have been held during the winter and several approaches have been analyzed but as yet we have not decided on what shall be the League's contribution to this problem. Doubtless the high school must receive more of our attention, but before we formulate any health education work with this group we must undertake some research in order that we may have a more factual basis for our undertaking. Also there is need for a demonstration as to what is the best type of health education for the high school. These are our immediate responsibilities.

Health education is more than a science, it is an art, based on science. It is not always easy to see accomplishments and to measure results but in a program of positive health, no other aspect of health work is more fundamental. It is even more fundamental and in the end less costly than health protection or correction, and to a socially minded imagination equally as satisfying. Not only must the new discoveries of science be given to the public from year to year but their habits and attitudes must be constantly motivated. It is evident that our job in health education has only begun and that it can never be completed. We must be constantly alert not only to promote advancement but to keep alive the desirable health practices already begun.

SOME REFLECTIONS ON SICKNESS INSURANCE IN GERMANY AND AUSTRIA

BY PROFESSOR C.-E. A. WINSLOW*

WHEN Dr. Bowers learned that I had been invited to serve as a member of an international Commission appointed by the Health Organization of the League of Nations, and the International Labour Bureau, to study the relation between health insurance and public health work in certain European countries, he asked me to send a memorandum of some of my impressions to the NEW ENGLAND JOURNAL OF MEDICINE. Our Commission, including public health experts and insurance fund physicians (from Belgium, Czechoslovakia, England, France, Germany, Holland, Italy, Jugoslavia, Poland and the United States) has just completed its first study tour of two and a half weeks in Germany and Austria, and I am setting down some fresh and preliminary personal impressions, as my train passes through the snow clad peaks of the Tyrol, en route from Vienna to Geneva.

The most valuable practical result of a study of foreign social conditions is the background which it offers for a truer estimate of those which obtain in one's own country. Our gracious hosts have given us an invaluable opportunity to learn about the medical situation in Berlin, Hamburg, Cologne, Nuremberg, and Vienna; but I, personally, feel that I have learned more about the United States during these weeks than about Germany and Austria. For one thing, I have come to the fairly definite conclusion that sickness insurance of the continental pattern would not fit into the social and economic conditions of America and is not likely to do so for some time to come. Yet there are lessons of profound significance in the experience of civilizations which are at once older and at the same time (as a result of the shock of war and revolution) more plastic than our own. It may be profitable to consider this experience very briefly, as it relates to the three interests concerned,—that of the wage-earner, that of the physician and that of the public health of the community as a whole.

What does social insurance mean to the wage-earner? To take the German law as an example, it means that every wage worker earning less than 8000 marks ($2000) a year must contribute a fixed proportion of his earnings, to which the employer must add a smaller proportion, forming a common insurance fund providing cash benefits and medical benefits in case of illness. Similar laws require insurance against accidents, invalidity and unemployment. Taking the four insurance funds together, the worker's contribution in Germany amounts to 8.5% of his wages, the employers' share to 5.0% more. In view of the strenuous individualism characteristic of American political thinking at the moment, such compulsory provision for the accidents of life does not seem within the range of practical politics. Yet the system has beyond any question proved of enormous value to the peoples who have tested it, so that, one after another, every country in Eastern Europe has followed Germany and Austria in passing such compulsory laws. Great Britain, of course, has done the same. A comprehensive law goes into force in France next January and Holland has just adopted the compulsory principle. Denmark and Switzerland give us examples of organized but non-compulsory systems of social insurance and it is here, particularly to Denmark, that we may perhaps look for examples, helpful to ourselves. There can be no doubt of the value of the abstract principle of insurance against sickness. If provision were made by each family for a reserve sickness fund many who today obtain free medical care or none at all could receive and pay for the treatment which they need.

A second, and much more difficult, problem is that which concerns the effect of sickness insurance upon the physician. This problem is immensely complicated by the fact that the relation of the physician to the insurance fund is so different in different countries and for different insurance groups within the same country. England stands at one extreme, with complete freedom of choice. "Any registered medical practitioner has a right to place his name on the list of those who are prepared to undertake service on the terms and conditions for the time laid down, and an insured person is entitled to select his own doctor (subject to the doctor's consent) from the list of those available in the district in which he resides." So satisfactory is this plan to the profession that, when the Ministry of Health recently threw the whole question open for consideration, the elected representatives of the panel physicians voted 99 to 1 against any change.

At the other extreme are the systems in force in such countries as Russia and Jugoslavia where medical service is furnished to the insured only by salaried district physicians, so that there is no freedom of choice whatever.

Austria and Germany stand between these two extremes. In Germany, free choice is the general rule, though in the larger cities the insurance funds maintain diagnostic clinics and treatment centres where salaried physicians furnish consultation service, and where laboratory tests and facilities for physio-therapy are provided. In general, the relation between the

*For record and address of author see "This Week's Issue," page 1169.

funds and the doctors are strained, particularly in these urban districts. In Berlin, open war broke out in December 1923. The medical association refused the terms offered by the insurance fund, and the fund proceeded to open its own polyclinics staffed by its own full-time salaried physicians. By March, 1924, 33 of these polyclinics were in operation. In 1927, 737,303 persons were treated by the salaried staff of the insurance fund clinics, 1,799,612 visits being made to the clinics and 297,815 visits to patients in their homes. The total cost to the insurance fund was about half the cost of medical care, medicine, medical supplies, etc., under the system of treatment by private physicians. In 1927, however, the vigorous opposition of the medical profession secured an official ruling that the polyclinics of the insurance fund should no longer treat insured persons. For the past two years a reduced number of insurance fund polyclinics have been operated for the treatment of the members of the families of the insured (whose legal status is a different one from that of the insured themselves). We have today the curious spectacle of an insured man enjoying the privilege of free choice and individual treatment by a private physician in his office while the wife and children of the insured have the advantage of the less individualized but more scientifically organized service at an admirably equipped polyclinic. It would be interesting to hear man and wife compare notes as to the two systems.

In Austria, for reasons of economy, the manual workers and the larger groups of clerical and office workers are served by salaried district physicians, while the more prosperous funds, such as those of the railway workers and the public employees, have free choice of doctors. In some of these funds the principle is carried so far that an insured person may consult even a physician who does not accept the terms offered by the fund, although in such a case the patient must of course make up the difference between the physician's charge and the fee allowed by the fund. The Medical profession in Austria is perhaps on better terms with the insurance funds than is the case in Germany, partly because the salaried district physicians of the funds are allowed to do outside practice and partly, as I was told on excellent disinterested authority, because the profession as a whole in Austria is animated by a somewhat unusually high ideal of patriotic service in the crisis which this country is meeting.

Sickness insurance, even under a system of free choice, of course implies that the physician is faced, not by a single patient who pays him (or fails to pay him) for a single service, but by a group of patients who contract with him for so much per head or per visit. The system should not, however, be confused with what is commonly called "contract practice" in America. In England and Germany the contract is made by the insurance fund not with the individual doctors but with the medical profession of the locality or the state as a group.

Under any scale of fees which the funds can pay there is always likely to be discontent among the scrupulous with the scale of fees, and a temptation to the less scrupulous to do more work than it is humanly possible to do well.

In Germany there is a class of practitioners called by their confrères Kassen löwen (lions of the fund) who see 20-30 cases an hour. There is a tendency under any insurance plan to overtreatment; and, in particular, light treatment and various forms of physio-therapy are in Germany carried to what the judicious consider unjustified extremes. The fact that the insurance doctor must certify to the right of the worker to cash benefits is of course a serious problem in itself. Where salaried physicians are employed there is likely to be a tendency to reduce the period of compensation to a minimum, while under a system of free choice the most popular physician will be the one who has the broadest conception of physical disability. The fact that the average time lost per worker through illness has risen from 6 days per year prior to 1900 and 7-8 days per year just before the war to 12 days per year in 1925 is certainly not due to an increase in the amount of illness, as the declining death rate shows. It is partly due to a change in the age composition of the population, and partly to an increase in a really desirable allowance for existing illness; but largely to unemployment and the success of the unemployed in obtaining certificates of illness to which they are not really entitled (unemployment benefits are of recent date and are lower than sickness benefits).

In spite of all such difficulties the fundamental fact remains that sickness insurance provides enormous sums of money to be used in paying for medical care,—sums which would otherwise not be available. It forces the man of small means to put aside money to pay the doctor. In Germany there are over 20 million persons insured in the sickness funds and they pay about 16 marks ($4.) per head for medical and dental service (not including drugs and supplies). This is a fund of nearly $80,000,000 made available for payment of physicians and dentists, largely on the part of that section of the population which, in America, receives free medical care. Whatever differences may exist as to details, the medical profession of Germany would never for a moment consider the abolition of the system as a whole.

Finally, from the standpoint of the public health, there are at least two distinct services which are rendered by the insurance funds. In the first place they facilitate that organization of curative medical service which is so important from the standpoint of technical efficiency. Compulsory salaried service by polyclinics is, in my judgment, open to very serious objections. It has

led, as we have seen in the case of Berlin, to bitter conflict with the profession as a whole; and it tends to a type of institutionalism which may easily defeat the highest aims of medical service. The crowding of patients, the lack of decent privacy and the hasty treatment (in one instance,—not in Berlin,—a doctor, an assistant and a nurse handled 30 patients an hour) would never be tolerated in the United States,—although it is unfair to apply our standards to cities suffering from economic handicaps of which we have no conception. On the other hand the consultative clinics where practising physicians of the funds can obtain laboratory and consultation service and special treatments for their patients represent distinct contributions to community medical organizations. The fund for the office and commercial (non-manual) workers of Vienna maintains an obstetrical and gynaecological hospital and clinic which could scarcely be equalled in the United States.

The second service which the insurance funds render is in the field of prevention. In large measure they have realized that it is to the interest of their members to check incipient disease. They contribute toward the cost of tuberculosis and venereal disease clinics. They operate preventoria and vacation homes. (In Cologne, one child out of ten in the public schools is sent each year to such an institution, two-thirds of the cost being met by the insurance fund.) Through the special grants which they make to mothers who breast-feed their babies, the funds secure remarkable results in the field of infant welfare. In Vienna, 80% of the mothers breast-feed for 6 months or more and the infant mortality rate has been reduced from nearly 160 to under 90. At the Krupp Works in Essen the local fund for a time provided periodic health examinations for its members, though the plan had later to be abandoned on account of financial stress.

It would seem clear in principle that the organization of the financial resources of persons of small or moderate means by regular contributions of such persons to a common fund helps materially to meet the emergencies of sickness. It would also seem clear that the organization of medical service in some relation to well-equipped hospital and out-patient clinics, makes medical care cheaper and technically more efficient.

Both for the patient and for the physician, however, organization has its dangers as well as its advantages. The right personal relationship between physician and patient may form quite as essential a therapeutic agent as an x-ray machine. The technical need for organization and the human need for individualization must be balanced against each other.

It may be that in the United States all these problems are solving themselves. It may be that all who need medical care are getting the kind of care they need at reasonable cost and are paying their fair share of that cost. It may be that physicians are as prosperous and as well-provided with technical facilities as they should be. The committee on the Cost of Medical Care is now trying to discover whether this is so or not. If it is not, we must set our national genius to work so as to find the method or methods best adapted to American conditions which will secure desirable technical organization without sacrifice of the essential individuality of physician and patient. A study of the successes and the failures of European nations may help us in this task.

A PROPOSED NATIONAL HEALTH INSTITUTE

Two bills relating to public health service have been introduced in congress by Representative Parker of New York. One proposed a National Institute of Health. The other if for co-ördinated public health activities.

The bill H. R. 3143 for a National Health Institute provides for authorization of the Government to "accept donations for use in ascertaining the cause, prevention, and cure of disease affecting human beings". The bill further provides that the Secretary of the Treasury be directed to submit to Congress necessary plans and specifications.

The other bill H. R. 3142 proposes to co-ördinate the public health activities of the Government and authorizes the Secretary of the Treasury to detail officers and men of the Public Health Service to various departments for special studies of public health problems and dissemination of information about public health to health officials and scientists engaged in special studies.

THE INCONSISTENCY OF SOME GOVERNMENT EXPENDITURES

For five years prior to 1929 our Government appropriated fifty-four million dollars for the study and care of plant and animal life. During the same period appropriations for scientific research and investigations of the diseases of human beings were under four million dollars.

Dr. Dublin has stated that this value of our vital assets, that is our men and women, is more than five times that of our property assets combined.

The Government may have been led to expect that since doctors are interested in the study of human diseases that it will leave the major burden of caring for the ills of the people to doctors and charitable organizations. The doctors would appreciate more confidence in scientific medicine and less endorsement to irregular methods of practice on the part of law making bodies, since so much seems to be left to medical men to do.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 15221

COMA

MEDICAL DEPARTMENT

A Canadian carpenter sixty-five years old was brought to the Emergency Ward comatose March 9. No friends came with him. The history is therefore meager.

Two weeks before admission he fell while standing on a tall box.

The night before admission he was found hanging over the bathtub unconscious. His condition had not changed appreciably between that time and his admission.

His physician reported that the patient had been under his care from September 21 to December 13 before admission. The main symptoms were edema of the legs, slight dyspnea, enlargement and considerable irregularity of the heart, blood pressure varying from 170 to 180 systolic and 90 to 100 diastolic, urine showing much albumin and a specific gravity of 1.015. He was given some medicine containing tincture of digitalis. How long after December 13 he took this was not known.

Clinical examination showed a thin elderly man lying flat with his head turned to the right. Right eye closed, left partially open. Right arm folded across the chest, resistant to motion, exhibiting coarse tremor. It could be moved voluntarily but with little purpose or apparent control. Right knee flexed. Left arm and leg were lying extended, resistant to passive motion. The patient was comatose but could be aroused slightly when spoken to and answered in intelligible labored words. Cheyne-Stokes respiration. Skin dark, not definitely cyanotic. Marked venous pulsation in the neck. Over the forearms were three or four copper colored areas, irregular in outline. Both legs showed fine excoriations on the thighs and large copper red bands of eczema encircling the lower legs, broken down in places. Lower legs slightly edematous. A small scar the size of a dime on the chest wall. Tongue protruded to the left with coarse tremor. Right eyelid resisted motion, left flaccid. Facial muscles flaccid on the left. Biceps, triceps, knee-jerks and ankle-jerks greater on the right. Left Babinski positive. Left pupil smaller than the right; both slightly irregular and reacted sluggishly to light. Questionable involuntary micturition. Lungs and abdomen normal. Heart not enlarged. Rate 80. Absolute irregularity. No thrill or murmur. Sounds of fair quality. Blood pressure 165/75 to 192/100. Fundi: right not seen, vitreous opaque; left, a pale area lateral to disc, vessels tortuous, a few small retinal hemorrhages.

Amount of urine not recorded. (Incontinent.) Urine alkaline, specific gravity 1.020 to 1.022, a very slight trace of albumin at both of two examinations, 8 to 10 red cells per field in one of two specimens of sediment. Blood: leukocytes 7,800 to 22,100, polymorphonuclears 80 per cent, hemoglobin 80 per cent, reds 5,028,000, smear normal. Wassermann negative. Non-protein nitrogen 40 milligrams. Icteric index 7. Stools negative.

Temperature 98.5° to 101°, with a terminal rise to 102.2°. Pulse 60 to 118. Respirations 16 to 31, with a terminal increase to 60.

The patient lay quietly. The left arm and leg were flaccid. March 10 there were no marked reflex irregularities. There was varicose edema over the left lower leg. The left forearm showed purpuric ecchymosis. There were red papules on the right shin. He could wrinkle his forehead. There was left facial palsy. Tongue deviated to the left. His speech was thick. There were visible cervical pulsations. The cardiac impulse was seen in the epigastrium. The heart was absolutely irregular, enlarged to the left, supracardiac dullness increased, the sounds of good quality, no murmurs. There were varices about the knees.

March 18 the condition was somewhat improved. There was now complete paralysis of the left arm and leg, no plantar reflex on the left. March 19 the leukocyte count was 16,700 with no obvious cause. The next day there was dullness at the right base. The leukocyte count was 13,000. He was put upon constant drainage. March 21 the patient was not quite so responsive during the day as he had been previously. That afternoon the respirations quite suddenly rose to 60. His head seemed to be drawn to the right by contraction of the sternomastoid muscles and others on that side. His right hand occasionally twitched. The right chest moved less than the left and showed dullness in the lower half of the back. The breath sounds were distant and seemed definitely shorter than on the left, being accompanied part of the time by a coarse to-and-fro scratch heard over most of the right lower chest. Spoken voice, whisper and tactile fremitus of course could not be elicited. At times expiration seemed raised in certain parts of the chest, at other times not. The heart was certainly not displaced to the left, and may have been drawn slightly over to the right. It was rapid and regular. There was no cyanosis. He was "rolled" several times on his good side, the left. This produced better aeration of the right lung, but improvement was not marked. The morning of March 22 he died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

The history is meager. We are prepared therefore for disaster.

The history of the present illness means a hypertensive type of heart trouble and perhaps something more; but we are not sure of any disease in the kidney yet. The hypertension inclines us to believe in a cerebral hemorrhage as the other event.

NOTES ON THE PHYSICAL EXAMINATION

The clinical examination shows the classical effects of hypertension and arteriosclerosis.

The urine examination does not show much evidence of nephritis. I should say it is more likely to be an arteriosclerotic process involving the kidneys along with the rest of the body. The non-protein nitrogen backs this up.

A cardiac impulse visible in the epigastrium is a sign of no value. We see it often with normal and abnormal hearts.

Cerebral hemorrhage or other vascular cerebral complication, which I believe he has, is enough in itself to cause leukocytosis. Many cases have been recorded. It is important in a cerebral case not to suppose that you have to find an inflammatory focus merely because there is a leukocytosis. I do not know the cause of the leukocytosis. I do not believe it has ever been explained.

They are looking hard for evidence of pneumonia. They are not finding it, but they are not sure it is not there.

There is no evidence of fluid on the left. They are thinking of massive collapse. But it does not seem likely.

DIFFERENTIAL DIAGNOSIS

In essentials this case exemplifies the disease which now is the commonest of all causes of death, hypertensive disease of the heart and vessels, with cerebral vascular lesions, which I put in that vague way because the difference between a softening and a hemorrhage cannot be told in any way that I know. The more you try to determine the exact situation of cerebral hemorrhages, as I used to do, the more wary you become. When I was a medical student I could tell you just where any cerebral hemorrhage was. Since I have been checked up by necropsy I can tell you less and less. I have seen too many mistakes. Tumors such as Dr. Cushing is dealing with can be definitely localized, but not cerebral hemorrhage. In a general way I should suppose this is on the right side. That is as far as I am willing to go.

What will he have in that right lung? I know ture ran along at about 100° for two weeks and no better guess than pneumonia. The temperature a half, then went up in the last few days to between 100° and 102° and stayed at 102° the last day. I think I had better say he had pneumonia, although the signs are not characteristic.

Could he have had a cardiac infarct? Possibly; but with such good compensation on the whole, so little dropsy, it seems to me it is safer not to say infarct.

I should say that Dr. Mallory ought to tell us of hypertrophy and dilatation of the heart without valve lesions, of arteriosclerosis, including the kidney, of a cerebral vascular lesion (apoplexy or "shock") on the right side presumably, and probably of a terminal right sided basic pneumonia.

A Student: Will a cerebral vascular lesion give any fever?

Dr. Cabot: Yes, it will.

A Student: As much as that?

Dr. Cabot: I cannot answer that. Certainly I have seen it when nothing else was found at death to account for fever. Then we always say something about the temperature center's being disturbed by the circulation. It sounds perfectly well. No one can prove it or disprove it.

A Student: Does the fever remain up for ten days or two weeks after a shock?

Dr. Cabot: I do not know whether all this fever could be accounted for by shock. I am sure some of it could.

A Student: You have not explained the purpuric spots on the legs.

Dr. Cabot: Did he have them, Dr. Mallory?

Dr. Tracy B. Mallory: He had a varicose ulcer.

Dr. Cabot: I can explain a varicose ulcer. I think I will not bother about the rest. Any real purpura ought to show at the post mortem.

A Student: You spoke of the heart's being absolutely irregular and then regular. If that was so it might explain a thrombus.

Dr. Cabot: It seems to me it has cleared up remarkably in such a short time. They did not investigate his legs very much, but I would take a general bet now that he did not have a thrombus.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

General and cerebral arteriosclerosis.
Cerebral hemorrhage.
Left hemiplegia.
Bronchopneumonia.

DR. RICHARD C. CABOT'S DIAGNOSIS

Arteriosclerosis, including the kidneys.
Cerebral vascular lesion on the right side, presumably apoplexy.
Probably terminal pneumonia at the right base.

ANATOMIC DIAGNOSES

1. *Primary disease.*

Arteriosclerosis.

2. *Secondary or terminal lesions.*

Encephalomalacia.
Adherent pericardium with ossification.
Infarct of the right lung.
Chronic passive congestion.

DR. TRACY B. MALLORY: The immediate cause of death was a thrombosis of one of the larger arteries of the left frontal lobe, with an area of softening about three centimeters in diameter. The lesion in the right lung was an infarct of the major portion of the lower lobe. The source of that embolus was not discovered, although it was possibly the heart, which has not as yet been opened. The heart presents a most unusual picture. There was nothing suggested in the history directly bearing on that. He had a tightly adherent pericardium, and on each of the lateral surfaces there was a large plate of bone, on one side about six centimeters long, on the other about four centimeters in length, about half encasing the heart in a solid bony wall. There was no evidence of tuberculosis, which is about the only common source I can think of for calcification of the pericardium. I am totally at a loss to account for it. The heart together with the pericardium and the bony masses weighed 510 grams. I think it was slightly hypertrophied, but not much.

The liver showed a very slight but definite cirrhosis, which perhaps checks the icteric index. The kidneys were normal in size and showed just a slight trace of arteriosclerosis. There was well marked generalized arteriosclerosis.

A STUDENT: Was there any lesion in the right side of the brain that amounted to much?

DR. MALLORY: There was none found.

A STUDENT: Was there only one brain lesion?

DR. MALLORY: There was only one brain lesion, but that was a very large one, mostly in the frontal lobe.

DR. CABOT: Cases like this are what discourage us in trying to localize hemorrhages.

CASE 15222

DIFFICULT AND DELAYED CONVALESCENCE; REINTRODUCTION OF DIGESTIVE FLUID

SURGICAL DEPARTMENT

A Canadian widow of sixty-one entered September 9 complaining of pain in the right upper quadrant.

For five years she had had sudden attacks of sharp pain in the right upper quadrant radiating to the back and up under the right shoulder blade, at first many months apart, recently about once a month. With each attack her physician had to give morphia for relief. Following the attacks she had dull ache for two or three days. During an attack on July 4, two months before admission, her physician said she was jaundiced. Certain foods gave her trouble—fried things, pastry and boiled cabbage.

Her past history is not significant except that she urinated once to five times at night.

Her father and one brother died of "stroke".

Clinical examination showed marked voluntary muscle spasm in the right upper quadrant and too much tenderness and rigidity in the gall bladder region for palpation. The examination was otherwise negative except for dry, scaly skin and varicosities and old healed varicose ulcers of the legs. Her weight was 82 lbs.

Urine before operation: amount not recorded, specific gravity 1.014, a very slight trace of albumin at one of two examinations, no bile. Blood before operation: 16,600 leukocytes. Icteric index 30. Blood sedimentation 41 per cent in two hours. Stool negative.

Before operation temperature 97.8° to 102.2°, pulse and respirations normal.

X-ray examination—not a Graham test—showed no visible gall stones.

September 12 operation was done. The patient was in very poor condition for the next four days, with vomiting and marked abdominal distention. There was some visible peristalsis. From September 16 to 20 the distention became less and she stopped vomiting. There were troublesome bed sores. By October 2 the wound was well healed and she was up and about, feeling well. She gained very slowly, however, and drained a large amount of bile. Oct. 6th her weight was 63 lbs.

October 10 the biliary sinus was put on suction and drained ten to twelve ounces a day. October 12 she was given her own bile by nasally introduced duodenal tube. She was much better next morning, and took more nourishment. She continued to make steady rather slow improvement. On October 23 she had much rectal pain from impacted feces. The suction apparatus was discontinued. Only seven ounces of bile had been obtained in the past twenty-four hours. On November 3 she was discharged in excellent condition, though her weight was only 69 pounds. The biliary fistula was practically closed. The stools were about normal in color.

May 16th she felt very well and had no pain or indigestion. She weighed 97 lbs. There was some weakness of the scar.

DISCUSSION

BY EDWARD P. RICHARDSON, M.D.

Diagnosis in this case was clearly disease of the biliary tract. The intermittent nature of the attacks, the severity and character of the pain and its short duration, pointed to cholelithiasis. The presence of jaundice on admission as shown by a high icteric index and the story of jaundice in a previous attack suggested the presence of a stone in the common duct. The

acute tenderness in the right upper quadrant might be due to cholecystitis; it might also be due to cholangitis and an associated hepatitis. The Graham-Cole test was not carried out because it is unreliable in the presence of jaundice. Here the indication for operation was so clear that the test was not required. The sedimentation rate of the blood may be high in obstructive jaundice. The jaundice was best explained as due to an obstruction in the common duct; it might, however, accompany acute cholecystitis on account of a reactive inflammation either around the common duct or in the liver without actual obstruction of the duct.

Diagnosis: cholelithiasis, stone in the common duct with cholangitis (?), acute cholecystitis (?).

Since there was no contraindication, operation was undertaken. Such a patient should be prepared for operation by an abundant fluid intake and a high carbohydrate diet. If necessary, glucose solution should be given by rectum or intravenously. One would not expect a tendency to hemorrhage with the slight degree of jaundice present. However, I believe that it would be erring on the safe side to give calcium chloride intravenously, 10 c.c. of a five per cent solution for three doses before operation as a protection against hemorrhage.

OPERATION

Gas and ether. Through a right rectus muscle splitting incision the gall bladder was found to be markedly thickened and very distended. It was emptied by a trocar. The common duct was easily visible. It contained a number of large stones. There was an anomalous hepatic artery running directly across the common duct below the entrance of the cystic duct. This was carefully avoided and the common duct opened just above it. Three large stones and a number of small ones were removed through the opening. A small catheter then irrigated the duct and passed freely into the duodenum. There was no evidence of any more stones above. A catheter was stitched into the duct and the duct closed. The gall bladder was then removed from below upward. There was a small amount of ooze in the bed of the gall bladder, therefore a gauze sponge was left in the sulcus of the gall bladder covered with rubber tissue on the side towards the intestine.

PATHOLOGIC REPORT

A gall bladder 8 by 4 centimeters filled with thick brownish yellow bile and many black irregular sized pigment granules. The wall is not thickened. The mucosa is thrown up into many ridges and folds.

Microscopic examination shows fibrosis of the subserous tissue and scattered collections of lymphocytes and endothelial leukocytes in the muscular layer.

Chronic cholecystitis.
Cholelithiasis.

FURTHER DISCUSSION

After a stormy convalescence this patient appeared to be safely through her troubles. However, although she was able to get out of bed she still lost ground to a point where her condition became again very serious. At this time the bile discharging from the wound was collected by suction and reintroduced by a small gastric tube. This made a surprising change in her condition, and she began to gain steadily. I believe it was a life-saving measure. It illustrates a general principle. Where there is loss of digestive secretions, say from a biliary sinus or from a high enterostomy, if these can be introduced again, the bile through a stomach tube, the intestinal contents into the bowel below the fistula, the patient will often be strikingly improved. The important substances lost are water and salts. These of course must be made up for by hypodermoclysis. But salt and water are not everything that is lost, and return of the secretions themselves may be a very valuable therapeutic measure.

DIAGNOSIS

Cholelithiasis.

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THE CAMPAIGN FOR FUNDS FOR THE BOSTON MEDICAL LIBRARY AND THE MASSACHUSETTS MEDICAL SOCIETY

FOR several years physicians in and about Boston have been aware of the advisability of concentrating medical and allied interests in a common center. In many cities throughout the country, organizations have been formed which are designed to promote influence and the usefulness of all agencies concerned in promoting health. In many places these combinations exist under the designation of an Academy of Medicine.

In Boston the Medical Library has maintained an organization for several years which in a somewhat restricted manner has met this plan. It has developed one of the largest medical libraries in the world and has provided accommodations for certain meetings of the Massachusetts Medical Society and other bodies. Its ambitions to fully meet local needs have been restricted because of inadequate financial resources.

Recognizing the need for an amalgamation of all medical and allied interests a group of physicians several years ago tried to create an organization which would unite in one body all medical, nursing, dental and similar societies with the Medical Library as its most important constituent member. It was shown that the charter of the Medical Library is an impediment to its joining in this project.

As it became recognized that no plan under consideration was likely to provide accommodations for the Massachusetts Medical Society, President John M. Birnie recommended to the Council in October, 1927, that an effort should be made to provide a home for the Society. This suggestion was adopted and a committee to solicit funds was appointed and a canvass inaugurated.

Meantime the Medical Library had been at work considering the necessity of meeting the needs of the profession, by additions to and changes in its building, and the suggestion was made that the Society and the Library might join forces to advantage and work for an endowment of both bodies under a plan which would provide funds for the needs of both.

The Medical Society committees under Dr. Birnie's plan accumulated contributions which have amounted to over $17,000 and thus abandoned the first plan and entered in the co-öperative effort with the Library to raise $650,000, one-sixth of this sum to be allocated to the Society.

When this objective shall have been reached the Society will have for its endowment over $100,000 which will meet the expense of its tenancy in the enlarged Library building. The money already raised and that to be raised for the Society in the combined drive will belong to the Society and if the Library shall ever need the space which will, under this present plan, be leased by the Society, the Society will have available resources which can be used in providing such other quarters as may be needed. This point is explained because there seems to have been confusion among those who have been solicited with respect to the relation of the Society to the Library. As soon as the whole amount of $650,000 shall have been subscribed it will be divided as stated above and the Library and the Society will each have the proportion agreed upon.

The drive has been in operation about six months and will now be suspended to be resumed in the autumn. Solicitation has been more generally confined to physicians with the purpose of demonstrating the endorsement of the profession. This endorsement will exert an influence on lay organizations. The autumn campaign will be more generally among laymen and more medical organizations. These fields can be cultivated to better advantage after showing the spirit of sacrifice among the doctors and those who for any reason may have omitted responding to the appeal can still contribute material and sentimental assistance to the movement. If every doctor will give as

much as he can afford, great impetus will be given to the campaign. The object is of major importance.

During the summer Mr. Ballard at the Library will have charge of details.

In the tabular statement below certain returns do not appear notably Plymouth, Norfolk South, and a few others because all the reports are not in and certain local committees are working in their respective fields. The reports should all be in before the campaign is resumed in the fall.

May 21, 1929.

ANALYSIS OF GIFTS BY DISTRICTS

Physicians

District	M. M. S. Campaign 1928		United Campaign 1929		Total Amount
	No.	Amount	No.	Amount	
Barnstable	0	$ 0	16	$ 105.00	$ 105.00
Berkshire	49	690.00	10	120.00	810.00
Bristol North	29	255.00	6	110.00	365.00
Bristol South	0	0	8	320.00	320.00
Essex North	41	650.00	17	286.00	936.00
Essex South	125	2,192.50	1	10.00	2,202.50
Franklin	2	30.00	1	25.00	55.00
Hampden	107	2,839.00	36	591.00	3,430.00
Hampshire	13	127.00	21	282.00	409.00
Middlesex East	0	0	10	135.00	135.00
Middlesex North	19	192.00	38	390.00	582.00
Middlesex South	85	2,446.00	111	4,130.00	6,576.00
Norfolk	28	265.00	152	6,161.00	6,426.00
Norfolk South	7	180.00	5	70.00	250.00
Plymouth	8	115.00	1	100.00	215.00
Suffolk	210	4,353.00	348	57,872.00	62,225.00
Worcester	101	3,370.00	184	5,356.00	8,726.00
Worcester North	1	5.00	14	144.00	149.00
Outside Massachusetts	0	0	4	120.00	120.00
Total, M. M. S. Members	825	$17,709.50	983	$76,327.00	$94,036.50
Library Members (not M. M. S.)			19	1,225.00	1,225.00
Physicians not members of either organization			19	767.00	767.00
Total from physicians	825	$17,709.50	1021	$78,319.00	$96,028.50
Laymen			449	85,068.00	85,068.00
GRAND TOTALS	825	$17,709.50	1470	$163,387.00	$181,096.50

GASES FROM BURNING X-RAY FILMS

DR. ALEXANDER O. GOETTLER, New York City Toxicologist, reported recently that the nitrocellulose type of x-ray films and the acetate type which is less inflammable both give off three deadly gases when burned. These gases are hydrogen cyanide, oxide of nitrogen, and carbon monoxide. The nitro-cellulose films give off much larger quantities of these gases than do the acetate films. This shows the wisdom of discarding nitro-cellulose films entirely and in addition protection of the acetate films so that there will be no danger of combustion of the less dangerous types.

Large hospitals in the course of time acquire large quantities of films and even with the less dangerous types, there will be some hazard in those which give off less poisonous gases if fire happens to invade the places where they are stored.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

GARLAND, JOSEPH. A.B., M.D. Harvard 1919. Physician to Children's Medical Department, Massachusetts General Hospital. Consultant in Pediatrics, Massachusetts Eye and Ear Infirmary. Consulting Pediatrician, New England Baptist Hospital. Instructor in Pediatrics, Harvard Medical School. Associate Editor, NEW ENGLAND JOURNAL OF MEDICINE. His subject is: "Appetite Loss in Infancy and Childhood." Page 1135. Address: 264 Beacon Street, Boston.

MARGESON, REGINALD D. M.D. Tufts, 1915. F.A.C.S. Assistant Visiting Surgeon for Gynecology and Obstetrics, Boston City Hospital. Assistant in Anatomy and Gynecology, Harvard Medical School. His subject is: "Abdominal Caesarean Section." Page 1141. Address: 520 Commonwealth Avenue, Boston.

YOUNG, EDWARD L. JR. A.B., M.D. Harvard 1909. F.A.C.S. Assistant Visiting Surgeon,

Massachusetts General Hospital. Visiting Surgeon, Faulkner Hospital, New England Baptist Hospital and Robert B. Brigham Hospital. His subject is: "Possibilities of Failure in the Removal of Stones in the Biliary Tract." Page 1145. Address: 279 Clarendon Street, Boston.

PETROFF, S. A. Ph.D. Director, Research and Clinical Laboratory, Trudeau Sanatorium, Trudeau, New York. His subject is: "Variability of the Tubercle Bacillus." Page 1148. Address: Trudeau Sanatorium, Trudeau, New York.

CHADWICK, HENRY D. M.D. Harvard 1895. Director, Tuberculosis Division, Department of Health, Herman Kiefer Hospital, Detroit, Michigan. Formerly, Superintendent, Vermont Sanatorium, 1907 and 1908. Superintendent, Westfield State Sanatorium since 1909. Acting Director (Tuberculosis) Division, Massachusetts Department Public Health 1926. His subject is: "The Ten Year Program For Children—Progress and Plans." Page 1154. Address: Herman Kiefer Hospital, Detroit, Michigan.

KIERNAN, FRANK. A.B. Executive Secretary, Massachusetts Tuberculosis League. He presents the "Report of Executive Secretary." Page 1155. Address: Massachusetts Tuberculosis League, 1149 Little Building, Boston.

LATIMER, JEAN V. B.S., A.M. Assistant Educational Director during World War of the Home Service Department of the American Red Cross. Lecturer for the Extension Division, University of Colorado. Teacher and Health Education Worker. Educational Secretary of the Massachusetts Tuberculosis League. She presents the "Report of Educational Secretary —1928." Page 1157. Address: 1149 Little Building, Boston.

WINSLOW, C.-E. A. M.S. Doctor of Public Health. Professor of Public Health, Yale School of Medicine. Member, Health Committee, League of Nations. He presents "Some Reflections on Sickness Insurance in Germany and Austria." Page 1161. Address: Yale University, New Haven, Conn.

THE BOSTON MEDICAL LIBRARY

HISTORICAL

THERE has recently been received at the Library through the courtesy of Dr. W. P. Bowers a copy of the Medical Dissertations read at the annual meeting of the Massachusetts Medical Society in 1828-29 and adjudged by a committee of the Society to be worthy of publication. This was in the possession of Dr. G. E. Whitehill of Everett, who kindly forwarded it to the Library. It bears date of 1829 and provides an exception to what Dr. O. W. Holmes somewhere poetically said, "Little of all we value here wakes on the morn of its hundredth year". Though, according to the records of the deliberations of the Council of the Society, it was a serious matter to collect a not inconsiderable part of the dues from the members, still they found money to pay, at the rate of a dollar a page, for the acceptable Dissertations. By vote of the Council at one of its 1829 meetings it was decided to continue to pay at that page-rate but limited the number of pages to 250. Evidently certain worthy members had threatened to impoverish the treasury by their prolixity. All through the Council Meetings of that period the subject of proposed legislation to provide a legal means of procuring material for dissection courses in the Medical schools was being agitated. Committees were appointed to draft such legislation but the feeling was that the times were not quite ripe for such proposals. In 1832 the efforts of these committees bore fruit, for, in that year, the Massachusetts legislature put itself on record as the first English-speaking, lawmaking body to pass such an enactment. They thus anticipated similar legislation in the English Parliament by about two years.

Another interesting vote was passed at one of the Council Meetings reported in this volume and that was to provide books on Natural Philosophy and Latin for the use of the Censors in their examinations. Indeed it was not left to the discretion of the individual what he should read in preparing himself to qualify before the Examiners of the Massachusetts Medical Society, as the following lists will show:

BOOKS REQUIRED

The Edinburgh System of Anatomy.
Bell's System of Anatomy, or Wistar's Anatomy.
Haller's First Lines of Physiology.
Richerand's Elements of Physiology.
Bichat on Life and Death.
Bichat's General Anatomy translated by Dr. Hayward.
Beclard's Additions to Bichat's General System of Anatomy, translated by Dr. Hayward.
Turner's Elements of Chemistry.
Brande's Manual of Chemistry by Webster.
Pharmacopoeia of the United States.
Paris' Pharmacologia.
Cooper's Surgery in two volumes.
Boyer's System of Surgery.
Boyer on the Bones.
Hunter's Treatise on the Blood, Inflammation, and Gun Shot Wounds.
Thompson on Inflammation.
Burns' Anatomy of the Gravid Uterus.
Burns' Treatise on Abortion.
Burns' Treatise on Uterine Hemorrhage.
Denman's System of Midwifery.
Denman's Aphorisms.
Dewees' System of Midwifery.
Good's Physiological System of Nosology.
Good's Study of Medicine.
Cullen's First Lines of the Practice of Physic.

G. Fordyce's Dissertations on Fever.
Armstrong's Illustrations of Typhus, etc.
Armstrong on Scarlet Fever, Measles and Pulmonary Consumption.
Sydenham's Works.
Heberden's Commentaries on Diseases.
Dewees on Diseases of Children.
Hunter's Treatise on Lues Venerea.
Baillie's Morbid Anatomy.
Cook's Abridgement of Morgagni on the Seats and Causes of Diseases.
Beck's Medical Jurisprudence.

BOOKS RECOMMENDED

Charles Bell's System of Dissections.
Shaw's Manual for the Student of Anatomy.
Wilson's Lectures on the Skeleton.
.....Vascular System.
Blumenbach's Physiology.
Bostock's Physiology.
Sheldon on the Absorbent System.
Charles Bell's Natural System of the Nerves.
Ellis on the Effects of Germination, Vegetation, and Respiration on the Air; in two parts.
Davy's Elements of Chemical Philosophy.
Murray's System of Chemistry.
Cullen's Materia Medica.
Murray's Materia Medica.
Pearson's principles of Surgery.
Cooper's Surgical Dictionary.
Astley Cooper's Lectures on Surgery.
Abernethy's Lectures.
Abernethy's other Pathological Works.
Guthrie's Operative Surgery of the Eye.
Vetch on Opthalmia.
Travers on the Eye.
Cooper and Travers' Surgical Essays.
Lawrence on Ruptures.
Burns' Principles of Midwifery.
Ramsbotham's Observations on Midwifery.
Merriman on Difficult Parturition.
Rigby on Uterine Hemorrhage.
Douglas on the Evolution of the Foetus.
Armstrong on Puerperal Fever.
Campbell on Puerperal Fever.
Clarke on the Diseases of Females.
Dewees on the Diseases of Females.
Celsi Opera.
Cullen's Nosology.
Parry's Elements of Therapeutics, etc.
Morgagni on the Seats and Causes of Diseases.
Baillie's Morbid Anatomy—with the Plates.
Whytt's Works.
Rush's Works.
Cheyne's Essays on Diseases of Children.
Huxham on Fevers and Sore Throat.
R. Jackson on Fevers of Jamaica.
Currie on Cold Water.
Senac on Intermittent Fever.
Alibert on Intermittent Fever.
Beddoes on the Combination of Fever and Inflammation.
Johnson on Diseases of Hot Climates.
Lind on the Scurvy.
Blackall on Dropsies.
Cheyne on Apoplexy, Lethargy, etc.
Corvisart on Diseases of the Heart.
Burns on Diseases of the Heart.
Maclean on Hydrothorax.
Laennec on Diseases of the Chest, translated by Forbes.
Colin's Manual for the Stethoscope, translated by Ryland.
Baron on Tuberculous Diseases.
Bree on Disordered Respiration.
Badham on Bronchitis.
Peirson on Chincough.
Pemberton on Diseases of the Abdominal Viscera.
Harty on Dysentery.
Hamilton on Purgative Medicines.
Brera on Worms; translated by Coffin.
Marcet on Calculous Disorders.
Adams on Morbid Poisons.
Bateman on Cutaneous Diseases—with plates.
Willan on Cow Pock.
Scudamore on Gout, Rheumatism, and Gravel.
Hamilton on Digitalis.

Besides these there is a supplementary list of periodical literature with which they were advised to be familiar. An interesting minute in the report of the Council meeting of October 1, 1828 was as follows: "The Counsellors were honored at this meeting by a visit from Dr. Holyoke who completed his hundredth year on the 13th of August last. The presence of this venerable man, still possessing in a high degree his mental and bodily powers, was highly gratifying, and was attended with many interesting associations, as no one was unmindful of the fact that he was one of the founders of the Society and presided over it when it first went into operation, nearly a half century ago. After receiving the salutations of the gentlemen present, he retired, escorted by the Committee who were appointed to wait upon him at the early part of the meeting." There is also an account of the energy with which the citizens of Salem attacked the problem of providing a contagious hospital when, in 1773, the town was threatened with a smallpox epidemic of a very virulent type, 16 of the first 28 attacked having died. The Committee in charge of the work dug the cellar, laid the foundation, erected and partly boarded the frame of the main Hospital building before dark of the Saturday next following the Wednesday upon which it was decided to build it. The building was 120 feet long, 20 feet wide and two stories high. The materials, except the stone, were brought two and a half miles. The work was commenced November 3rd and on December 9th there were 132 patients admitted and inoculated. Three dissertations and a list of the members of the Society at that time occupy the rest of this fourth volume of the Societie's publications. The first was a biographical sketch of Dr. Holyoke; the second

a prize dissertation on Intemperance by Dr. Sweetzer of Vermont. This won a $50 award offered by the Society for the best thesis upon Intemperance. The third is a paper entitled "Observations upon Abortion", by Dr. Hale.

It is an interesting, though incomplete volume, and gives one a flavor of the early medical life of the State which makes entertaining reading. It may be seen at the Library by any who are interested in Medical History.

MISCELLANY

INVESTIGATIONS OF PUBLIC HEALTH PROBLEMS

In a report submitted to Congress recently, Surgeon General H. S. Cumming of the Public Health Service, states that scientific studies had been prosecuted by the Public Health Service during the past year with gratifying progress. With improved equipment the stream pollution investigations have advanced satisfactorily in all of their branches. The study of the upper regions of the Mississippi River, undertaken at the request of the States immediately interested, was completed and the report of the findings, with recommendations for remedial measures, was submitted. Certain improvements in the equipment of the artificial stream, located on the laboratory grounds at Cincinnati, were made during the year. Recently this laboratory has begun to take up anew the study of certain phases of waste disposal which has been interrupted for a few years.

Researches in malaria have been carried on under four principal projects:

(1) Screening studies devised to determine the exact preventive value of cheap but efficient screening of the poorer class of plantation homes in highly malarious territory. In order to bring the costs within the means of the population affected, the experiments have necessarily been very detailed, and due attention has been given to the question of durability and upkeep of the installations. The final determination of results is to follow.

(2) New methods of applying larvicides have been studied, and during the year a convincing demonstration of the value of airplane distribution of Paris green was made at an impounded water project at Bamburg, South Carolina. The employment of this method in selected cases, it is believed, would result not only in the protection of the affected populations against malaria having its source in the newly impounded waters, but, by reducing the cost of such control, would materially encourage the establishment of those available projects which, in turn, will be expected to contribute to the material and cultural progress of those regions. Preparations were made during the year for distributing larvicidal dust by means of air propellers attached to boats.

(3) Studies of new larvicides have been carried on, and a large number of substances have been prepared in the attempt to devise cheaper or more effective larvicides, and their testing out was in progress at the end of the fiscal year.

(4) Studies of new treatments for malaria were made, and experience was gained during the season with a new and widely heralded preparation for which advantages in the treatment of malaria have been claimed.

Industrial hygiene investigations have yielded a number of contributions on timely subjects, especially those of a series dealing with the effects of all the principal classes of injurious dust met with in industry. The subject of daylight illumination as applied to factories and other buildings has received attention during the year, and a special cabinet for making fundamental determinations has been set up and placed in operation. The preliminary studies of the possible danger of tetraethyl lead gasoline have been continued without eliciting any evidence that the first conclusions were not sound. The Section of Industrial Hygiene has contributed much co-öperative work to other Government establishments, and has co-öperated with industrial agencies in securing and analyzing records of disease and injury among employees with a view to devising preventive measures.

In connection with these studies, it was found that attacks of respiratory sickness having their onset in late winter and early spring tended to be more prolonged than those which began in the early part of winter. From this it appears that a lower resistance to respiratory infections is found among industrially employed persons toward the end of winter than at its beginning.

The child hygiene investigations conducted during the year included the observation of a large group of children which had been continued for seven years in a representative American community. These observations were discontinued at the end of the fiscal year, and the large amount of material secured is being analyzed and arranged for publication.

The studies relating to the sanitary control of milk made by the Service have progressed favorably. Not only are the reports of the field workers favorable as regards the improvement caused by the adoption of the standard milk ordinance recommended by the Public Health Service, but a questionnaire addressed in midwinter to the local health officials and dairymen met with an impressive response, constituting practically unanimous approval of the workings of this ordinance in the areas in which it has been adopted. Not only is better milk provided, but what is equally important, much more of it is consumed. The ordinance has not been without its critics, but it is noticeable that these are located in the areas which have never tried it and can consequently criticise it only upon theoretical or academic grounds. It is foreseen that, in view of the constantly increasing interstate significance of milk, both from a sanitary and a commercial standpoint, some degree of uniformity of control methods is unavoidable; and it is hoped that the milk studies of the Public Health Service may play their part in bringing this about in an orderly and reasonable manner. The studies of pasteurizing apparatus have been continued with encouraging progress.

The cancer investigations of this Service have taken on a new and wider scope due to the promise offered by two lines of research developed by Service investigators. One of these has to do with the employment of oscillating currents of very high frequency, and the early success of treating animals afflicted with cancers by this means has been con-

firmed and the effective range of these currents has been accurately determined. The other line of research consists of an ingenious method for measuring cellular activity in living tissues. A conference was held during the year with some of the most eminent cancer students in the country. The work of this Service on this problem was endorsed, and the evident need of its expansion was emphasized.—*United States Public Health Service.*

A GIFT TO THE NORTH SHORE BABIES HOSPITAL

A gift of $1,000 from the beneficiary fund of the late Colonel David Lyman Jewell of Wollaston was given to the North Shore Babies Hospital to completely tile and refinish the Formula Room of the Hospital. This gift was obtained through the interest of Elmer Cowdrey of Peabody and C. S. Barton, Jr., of Brookline, who are the executors of Colonel Jewell's will and can use the fund left for charity at their discretion.

Last year a gift was given to the Hospital by Mr. Cowdrey and Mr. Barton to furnish a room in memory of Colonel Jewell for the toddlers. At the tiny tables and chairs the children sit for the meals of specially prepared food served as reguarly as clockwork, which is another factor in the recovery of children from feeding troubles. Near the toddlers' room is a play room, and a long sun porch accommodates more than a dozen cribs. Also included in the gift last year was a modern sterilizing plant in the milk laboratory and much needed office equipment.

The North Shore Babies Hospital, which is supported by donations and drives, can take care of approximately 40 babies, mostly feeding cases, although there are babies suffering from other acute infections.

The history of the Hospital goes back to 1904 when a group of Peabody citizens founded it at an estate on Baker's Island to cope with an epidemic of cholera infantum which was raging in Peabody.

Babies outside of Peabody were also accepted and saved. In 1908 on account of the difficulty of transportation the Hospital was removed to the Ropes mansion at Ropes Point, a very beautiful location.

Up to three years ago the Hospital was open only during the summer as that seemed to be the most important time for the work it was doing. However, it is now open all the year around. There are 35 babies, ranging from new-born infants weighing two pounds and 15 ounces to lively two-year-olds able to make merry in a rocking chair.

RESPIRATORY ILLNESS AND TYPE OF VENTILATION IN SCHOOLS

A report of considerable interest relating to respiratory illnesses and type of ventilation in schools, has recently been made public by Surgeon General H. S. Cumming of the Public Health Service. In this study a comparison is drawn between two groups of schools, one group ventilated by mechanical means and the other by the natural open window method. The groups are very nearly equal in size, the mechanically ventilated group having 1,573 pupils and the window-ventilated group 1,546 pupils. The two groups are highly comparable in composition, the first having 17.5 per cent. of pupils of American parentage and the second 15.0 per cent. of such pupils; the average age of pupils of the first group is 7.9 years, and the second 8.6 years. The sex distribution of pupils is practically the same in both groups of schools. The weighted mean temperature of the rooms of the schools throughout the course of the study was found to be very nearly the same for both groups, being 67.8° F. for the mechanically ventilated group and 68.1° for the naturally ventilated group. The total respiratory illness absenteeism findings of the study show the rate for such absences in the mechanically ventilated group to be 3.0 per cent. of pupil sessions and for the naturally ventilated group to be 1.8. If, instead of total respiratory illness, we use independently collected data concerning only those illnesses causing an absence of three days or more the study disclosed a respiratory illness rate of 3.3 per cent. of pupil sessions in the mechanically ventilated group of such schools, as compared with 1.2 per cent. for the naturally ventilated group. It is important to note that the respiratory illness absences of a duration of three days or more in the mechanically ventilated group of schools was in excess of that found in the naturally ventilated group in all cases, and that the same was true for respiratory illness absenteeism for a duration of one-half day and more, with but one exception. In this case the mechanically ventilated school had a rate of 4.4 while the window ventilated had a rate of 4.7 per cent. And, lastly, it might well be pointed out that the actual numbers of absences of a duration of three days or more amounted to 359 in the mechanically ventilated group as compared with 133 in the window-ventilated group. For these data it appears reasonable to conclude that the atmospheric conditions produced by the systems of mechanical ventilation in use at the time of the study were associated with higher respiratory illness absence rates. These studies, however, should certainly not be interpreted as condemning all mechanical systems of air conditioning.

It is not possible to state with which element or elements of the atmospheric conditions lies the responsibility for these observed differences in absenteeism. Our investigations concerning temperature conditions indicate the weighted mean temperature of the two groups of schools to be very nearly alike. More detailed investigations of temperature may be of value. Certainly in the problem of school ventilation the elements of humidity and air motion require further detailed study, which unfortunately, this investigation could not supply.

The present study confirms the findings of the New York State Commission on Ventilation of 1916-17, except in so far as these studies bear on the importance of very slight degrees of overheating. Likewise, the present studies confirm those of the New York Commission on Ventilation made in Syracuse, N. Y., in 1927. It may be well to recall a statement from the report of the New York State Commission on Ventilation:

"Because window ventilation is practicable for the ordinary schoolroom it does not follow of course that the assembly room, the theater, and other places seating, in certain cases, many people can also be dealt with in this manner. Each type of inclosure must be handled as a distinct problem. Natural ventilation has its limitations. That the schoolroom is not beyond these limitations is indicated by this study".—*United States Public Health Service.*

MASSACHUSETTS CENTRAL HEALTH COUNCIL

Report of Committee on Public Clinics and Professional Service

Pursuant to the resolution adopted at the meeting of the Council at Worcester on October 31, 1928, the then President appointed a Committee to make a study of problems in connection with public clinics and professional service. This is a report of that Committee.

The Committee met and organized and after reviewing the task voted to divide itself into three sub-committees to study special phases of the problem. These sub-committees have each had a series of meetings of their own and the general meeting received tentative reports, after which the sub-committees continued to hold meetings and a final meeting of the general Committee was held on May 10th. At this meeting the reports submitted by the Chairmen of the sub-committees were received and approved with slight modifications.

The entire report is submitted for consideration by the Council and if approved in its present form or in an amended form will be sent as per original plan to the Constituent Organizations of the Council for their review and appropriate action.

The three sub-committees appointed were as follows:

A sub-committee to study the problem of securing professional service for public clinics of which Dr. Joseph H. Pratt was Chairman. This Committee in turn appointed a sub-committee to study the problem as it affected the dentists, this sub-committee being Dr. William Rice and Dr. William Flynn.

The second sub-committee concerned itself with the problem of the public health nurse in relation to the free health resources which the community provides and a further question which grew out of that, namely, to what extent the public health nurse may carry on a health educational campaign in connection with her work. Of this committee Miss Laura A. Draper, R.N., of the Community Health Association is Chairman.

The third committee was called—Sub-Committee on Criteria for Admission to and Rejection of Patients to Clinics.

The reports of these three committees will be presented in the order just mentioned.

The Sub-Committee on Public Clinics and Professional Service addressed to the Presidents of each of the District Medical Societies of Massachusetts the following communications:

"*Dear Doctor:*

The Massachusetts Central Health Council recently appointed a committee to consider public health clinics and professional service. I was made chairman of a sub-committee to consider problems in connection with the appointment of the professional staff for public health clinics. There are now a goodly number of these throughout the State. The lay members look for guidance to the medical profession. An attempt will be made to formulate principles of procedure with which leading physicians throughout the State are in agreement. With this end in mind my sub-committee has prepared a statement of its present opinions, which is enclosed. It is important to know whether these views are in accord with those generally held by the physicians of the State.

I am desirous of getting your views and those of your Society. I hope you will be willing to read this memorandum at the next meeting of your Society and ask that suggestions or criticisms be sent to you. Any expression of opinion will be helpful to our committee. I hope you will sound out the feeling of your members and give me the results of your inquiry.

Yours sincerely,

(Signed) Joseph H. Pratt, M.D."

(Enclosed Statement)

The Problem of Securing Professional Service for a Clinic

For the Board of Health or private organization contemplating clinic service in some one of the many aspects of public health, the greatest care must be exercised in the selection of the professional staff. A clinic for infants and well children, the tuberculous, the venereal, those needing dental care and the like must depend for quality of service on its clinician more than on any one single factor. Also whether the new clinic properly supplements existing resources or not depends to a large extent upon the ability and judgment of the physician or dentist. Advice on personnel should be obtained from the local or county professional society involved. But it should be borne in mind that a frequently rotating service is not satisfactory to either the clinician or the clientele. One or a very few local men should be selected because of special interest and training in the field served. If such are not available, they should be brought in to staff the clinic. All professional service should be remunerated.

The nursing staff should be selected with special reference to training in public health. Where the clinic is not large enough to employ a social worker also, the nurse should be familiar with the methods of social service case work, since the success of such clinics is very largely dependent on intelligent follow-up."

Dr. Pratt reported that replies were received from nearly 50 per cent. of the District Medical Societies. The replies suggested no change in the principles laid down in the memorandum accompanying the letter with respect to selection of clinic staffs. Some of the Presidents made some supplementary suggestions not of a major character and need not be reported here, for example, it was recommended that the problem be presented through the New England Journal of Medicine, to the medical profession at large and a request made that suggestions be sent to the Committee on Clinics of the State Medical Society. This of course will be entirely acceptable to this Committee. This sub-committee therefore is prepared to report that the organized medical profession has so far as heard from subscribed to the principles stated in the memorandum with respect to securing professional service for public clinics.

The sub-committee on dental clinics sent out 249 reply postals to school dentists of Massachusetts submitting the following questions:

Question No. 1: In your estimation does the public school clinic in your city influence unfavorably the private practice of dentistry? If so, in what way?

To this question 87 dentists replied that they knew of no unfavorable effect on private practice but they believed the clinics to be big factors in educating the public on the importance of preventive dental work as a public health measure; 2 dentists replied that they were aware of the fact that many persons of means patronized the clinics; 1 dentist advised the

appointment of a Standing Committee to advise towns as to the inauguration of public clinics (This has already been done); 1 dentist replied "Dental Clinics run for the care of children exclusively should be compelled to investigate more accurately the financial status of the families applying for treatment"; 1 dentist states "The great weakness in free dental clinic service is the social service investigation of patients who could well afford to pay a private dentist." These constitute the answers of the 93 dentists replying to question No. 1.

Question No. 2: Is the attitude of the local dentists toward the clinic cordial or otherwise?

66 school dentists replied "Cordial"; 20 replied "Lukewarm, Passive, Indifferent, Unfavorable, at first antagonistic, now tolerant"; 8 school dentists were non-committal.

These statements constitute the report of the Sub-Committee on public clinics and professional service.

The sub-committee on the problems of the public health nurse in connection with clinics sent the following questions to the members of the general Committee for their consideration and suggestions:

Question No. 1: How is the public health nurse to be guided in her use of the free or partly free health resources which the community has provided?

RECOMMENDATION OF SUB-COMMITTEE BASED ON REPLIES

That the nurse consider carefully the economic status of the family and the possibility that the family employs a "family physician" before she makes suggestions as to care.

That the nurse encourage families able to pay for private care, to do so, and discourage the use of publicly supported agencies.

That the nurse explain clinic service to such families as are apparently unable to pay the full cost of medical care, leaving to the family the responsibility of choosing between private or clinic care.

Question No. 2: With how much freedom may the nurse proceed to carry on an educational campaign?

RECOMMENDATION OF SUB-COMMITTEE BASED ON REPLIES

That every effort be made by organizations employing nurses to act as health educators to secure nurses who are as well equipped with judgment, tact and commonsense as with sound professional education. Although this sounds obvious, it goes to the root of the matter since no restrictions are necessary for a nurse of this calibre, and a nurse who has not these qualifications is apt to be a constantly disturbing factor.

The Committee of the Whole considered the recommendations of the sub-committee and accepted them. This was followed by a discussion of the best method of securing an endorsement of these recommendations by the Committee on Public Health of the State Medical Society. It was the consensus of opinion that the State Commissioner of Public Health, Dr. George H. Bigelow, was the proper person to take this matter up and on the consent of Dr. Bigelow it was so agreed.

The third sub-committee on the criteria for admission to and rejection of patients to clinics had as its Chairman, Dr. Henry B. Elkind, and as consultants Miss Elizabeth Rice, R.N., of the Boston Dispensary, Miss Harriet M. Bartlett of the Massachusetts General Hospital Social Service Department and Frank Kiernan. The Committee in its work was guided by the following recommendation of the American College of Surgeons adopted at the Boston meeting in October, 1928:

Recommendation Concerning Out-Patient Department—Paragraph 6 in part as follows:

". . . . that a definite system of determining the social or financial status of the patient, in relation to eligibility for treatment in the Out-Patient Department be established to prevent the use of the service by those who are able to pay."

The recommendations of the sub-committee on this subject are as follows:

There should be at the Admission Desk in every Out-Patient Department one or more admission officers with social training and good judgment who are able to inquire into the social and economic condition and previous medical care of the patient and his family. Each hospital should set up standards for the guidance of the Admission Officers.

1. On the basis of the findings the admitting officer should refuse to admit:

a. Such patients as in his judgment can afford the services of a private physician.
b. Patients who have been recently admitted to another hospital or clinic in the same community for the same condition unless formally referred or transferred.
c. Patients who have been under the treatment of a private physician recently for the same condition, unless the private physician has referred the patient to the clinic, or unless he consents to the admission.
d. Patients outside the geographical limits which the hospital may have set up.

2. The admission officer should admit:

a. Emergency cases whose final disposition should be determined after treatment.
b. Patients whose income is adequate for minor or short-time treatments but who need care, the cost of which at private rates would be beyond the patient's ability to pay.

It is recommended that the admission officer should secure the following minimum data in order to identify the patient adequately and to show the reasons why the patient is admitted: Name, age, sex, marital status, address, occupation, name of consort or parents, number in the family, number working, income of patient and other members in the household, previous medical care (name of hospital or doctor, date, diagnosis).

Once admitted the above data should be periodically rechecked.

These three reports constitute the Committee's report which is respectfully submitted for your consideration.

HENRY B. ELKIND, M.D., *Chairman*,
GEORGE H. BIGELOW, M.D.,
LAURA A. DRAPER, R.N.,
JOSEPH H. PRATT, M.D.,
GERTRUDE W. PEABODY,
WILLIAM RICE, D.M.D.,
WILLIAM M. FLYNN, D.M.D.,
DWIGHT F. O'HARA, M.D.,
LANGDON FROTHINGHAM, D.V.M.,
A. A. ROBERTSON,
FRANK KIERNAN.

A DRIVE FOR FUNDS FOR THE SOMERVILLE HOSPITAL

At a dinner held in Somerville, May 20, it was reported that $60,000 has been raised for the New Building of the Somerville Hospital.

The nurses have pledged $2,000 for a room in the new building. The staff doctors have subscribed $7,775.00. The soliciting committees are to make reports of progress at frequent intervals.

SURGEON GENERAL CUMMING REPORTS ON CONTROL OF COMMUNICABLE DISEASES

In a recent report to Congress the Surgeon General stated that no instance of the entry in this country of quarantinable diseases occurred during the last fiscal year.

Several cases of communicable diseases reached quarantine but were not released until free from contagion.

During the year modifications in quarantine practice were made relieving vessels engaged exclusively in trade between ports in the United States and those in our possessions and dependencies, except where quarantinable diseases were prevalent, at the port of departure.

DR. SCHMIDT'S EXPULSION FROM THE CHICAGO MEDICAL SOCIETY UPHELD

The Council of the Illinois State Medical Society has upheld the action of the Chicago Medical Society in the expulsion of Dr. Louis E. Schmidt as far as the legality of the procedure is considered. The merits of the charges against Dr. Schmidt will be taken up by the House of Delegates of the State Society which will rule on the contention of the Chicago body to the effect that Dr. Schmidt's association with an organization that advertised for patients is unethical.

Dr. Schmidt is President of the Social Hygiene League. The Public Health Institute donates twelve thousand dollars annually to the League for treating charity patients. The Institute advertises in newspapers.

GERMANY ASKED TO MAKE EUTHANASIA PERMISSIBLE

In connection with the redrafting of Germany's penal code, Dr. Alexander, a Communist Deputy, asked immunity for a physician who caused the painless death of a patient suffering with an incurable malady. The request for the introduction of immunity in the code was qualified by the provision that euthanasia could only be brought about by the decision of a dying person.

This subject led to an active discussion by doctors and others and the usual well-known arguments pro and con were brought forward. The commission to revise the laws rejected the motion to legalize euthanasia.

The fear of murder under the claim of euthanasia will continue to prolong the refusal to relieve a dying sufferer.

Dumb animals have one advantage over human beings. It seems strange that human ingenuity and sympathy cannot combine justice and mercy in meeting the wishes of the hopelessly sick.

Morphine and sympathy are the standard consolations of the dying and sometimes failing circulation deprives morphine of its merciful solace.

'HEALER' ARRESTED AFTER MAN DIES

Fiorinto Galeazzio of 16 Gore street, East Cambridge, was arrested recently by the police of the East Cambridge station, charged with illegal practice of medicine, following the death in his office of Roy Rosa, 25, of 149 Salem street, North End, a laborer.

Dr. Abraham Weidman of 431 Cambridge street, Cambridge, who was called to Galeazzio's home and found Rosa dead, notified Medical Examiner David C. Dow. According to the police, Galeazzio set himself up to be a healer in medicine and a spiritualist and maintained signs in his office to that effect. Rosa, they say, came to him for treatment and was fatally stricken while in his office.

Galeazzio was held in $3000 for his appearance in the Cambridge district court.—*Boston Herald.*

DEDICATION OF THE NEW WING OF THE MELROSE HOSPITAL

This addition was open for inspection National Hospital day when Rev. A. Z. Conrad of the Park Streee Church, Boston, delivered the dedication address.

Mr. and Mrs. Alfred H. Colby gave the necessary funds for this addition.

CORRESPONDENCE

ARTICLES ACCEPTED BY THE AMERICAN MEDICAL ASSOCIATION COUNCIL ON PHARMACY AND CHEMISTRY

535 North Dearborn St., Chicago, Ill.
May 25, 1929.

Editor, THE NEW ENGLAND JOURNAL OF MEDICINE:

Dear Doctor:

In addition to the articles enumerated in our letter of April 26th, the following have been accepted:

Ciba Co., Inc.
Isarol—Ciba

Deshell Laboratories
Petrolagar with Milk of Magnesia

G. D. Searle & Co.
Sulpharsphenamine—Searle, 0.1 Gm. Ampules
Sulpharsphenamine—Searle, 0.2 Gm. Ampules
Sulpharsphenamine—Searle, 0.3 Gm. Ampules

Swan-Myers Co.
Canada Blue Grass Concentrated Extract—Swan-Meyers

Yours truly,
W. A. PUCKNER, *Secretary,*
Council on Pharmacy and Chemistry.

A REFERENCE TO THE CASE RECORDS

Dear Mr. Editor:

I cannot but tender my congratulations to the Cabot Case Records for their diagnostic acumen. A few weeks ago we had a case of hoarseness and pain in the shoulder; today one of diarrhoea and pain in the right foot. Dyspnoea in the shoulder, while unusual, fills me only with admiration of the types of

cases encountered at our oldest hospital. It is with sadness, however, that I contemplate, from the patient's viewpoint, the disagreeable feature which must be associated with a bad attack of diarrhoea in the foot—particularly the right foot.

Yours for science,
A CONSTANT READER.

A CORRECTION OF A STATEMENT IN AN ADVERTISEMENT

May 20, 1929.

THE NEW ENGLAND JOURNAL OF MEDICINE:

Because of the fact of Pomeroy Company having advertised a frame truss since 1879 and in your JOURNAL since 1912, we are wondering whether it is quite ethical for the Garland Hernia Institute to advertise in the NEW ENGLAND JOURNAL OF MEDICINE that they use the original frame truss and that all others are imitations.

Judging from an article written by Mr. Garland and published in your issue of May 9th, where he mentions 1891 as being the date of the invention of the frame truss, he made this statement as well as the one in his advertisement unintentionally and because of a lack of knowledge of the facts.

In explanation of the question raised would refer you to page 9 of the enclosed booklet on the frame truss, written by Daniel Pomeroy in 1896.

Yours very truly,
POMEROY COMPANY.

RECENT DEATHS

BOND—DR. WALTER LEGRAND BOND, Medical Inspector of the Somerville Public Schools for the past twenty-two years, a prominent physician of West Somerville, died at his home in that city May 15, 1929, after a year's illness, at the age of 51.

He was a native of Chelsea, was educated in the schools of that city and at the Harvard Medical School, where he took his M.D. in 1901. He was a Fellow of the Massachusetts Medical Society and of the American Medical Association. Dr. Bond had been Secretary of the Middlesex South District Medical Society and of the Somerville Medical Society.

He is survived by his widow, Bertha B. Bond, and by a married daughter.

COOPER—DR. ALMON COOPER, long a general practitioner of Brookline, a Fellow of the Massachusetts Medical Society, died at his home in that town of heart disease, May 21, 1929, at the age of 66 years.

He was born in South Berwick, Maine, January 9, 1863, being brought into the world by "old Dr. Jewett" the father of Sarah Orne Jewett, author of "The Country Doctor." Dr. Cooper studied in the schools of his native town at Salmon Falls, Maine, and went on to the University of Vermont College of Medicine at Burlington, where he took his M.D., in 1888. After four years of practice in Hyde Park, Vermont, he settled in Brookline near Coolidge Corner, acquiring in time a very large practice. Dr. Cooper was tall, thin, broad-shouldered, with bearded face and deep-set kindly eyes, suggesting in many ways Abraham Lincoln. He had a gift at general practice and wore himself out by hard work in his profession, into which he put a strong human touch. He is survived by his widow, Mrs. Myra E. Cooper, and by an adopted daughter.

OBITUARY

WILLIAM WHITWORTH GANNETT, M.D.
1853—1929

DR. GANNETT was born in Boston, June 25, 1853, the son of William Whitworth and Charlotte Kingman (Sanger) Gannett. He was a descendant of Matthew Gannett, who came from England in 1640 and settled in Hingham. Another ancestor married a great-granddaughter of John Winslow and Mary Chilton, "the first female who set foot on American soil." There was also a connection with Peregrine White, the first English child born in New England. More recent ancestors had held official positions in Harvard College; Caleb Gannett was a Fellow in 1778 and the Rev. Thomas Brattle Gannett, the grandfather of Dr. Gannett, was an Overseer from 1819 to 1833. Of the maternal ancestors the records go back to a settler in Hingham in 1638. This is an unusually solid background of New England heritage and one that could be depended on to result in firmness of purpose in the descendants.

Dr. Gannett prepared for Harvard at the Cambridge High School and entered in 1870. He was a good scholar and held high rank in the courses in English and history and especially in chemistry and natural history and other studies considered to have a definite relation to the practice of medicine. After taking his degree of A.B. in 1874, he entered the Harvard Medical School in September of the same year. His conscientious pre-medical career and his strong medical bent assured his success as a medical student. The regular course at that time was three years, but he was not satisfied to stop there and decided to take a fourth year, at that time unrequired, being thus the first so to do. In the Medical School catalogue for 1877-78 are the names of eight taking a postgraduate course and listed as postgraduates. Then follows, separated from the above, the name William Whitworth Gannett—the first and only one to take this extra year. As an industrious, well-equipped worker he used this voluntary extension of his course as a sort of free lance, and as he had definite ideas as to what he wanted and needed he was given unusual opportunities by some of the teachers in the Medical School and the hospital who were glad to use him as a sort of assistant, thus helping themselves as well as the ambitious student. The fact that he was alone in this unrequired work attracted the favorable attention of the faculty, with some of whom he developed strong friendships, and at the end of this extra year he was, as a matter of course, taken into the Massachusetts General Hospital as a house pupil on the Medical Side, and at the end of his service he received his M.D., in 1879.

After this came a year of study in Europe, in Vienna and Strasburg, with pathology, histology and microscopic work under Recklinghausen and Waldeyer. This was his only visit to Europe, in fact, after that, he seldom took a real vacation.

In 1880 he began practice in Boston, having an office with Dr. George G. Tarbell, one of the visiting physicians of the Massachusetts Hospital with whom he had previously established friendly personal relations. His services were soon in much demand and he received a number of appointments entailing hard work, but in the line to which he had devoted much attention in his extra year. Dr. R. H. Fitz with whom he had studied and whom he had assisted at the Medical School, was in charge of the department of pathology there and at the Massachusetts Hospital. In 1882 Dr. Gannett was appointed assistant in pathology and for several years it was his duty to give practical instruction in performing autopsies in association with Dr. Fitz, a very valuable training. He was in charge also of laboratory exercises in pathological histology.

Another position that he held, from 1882 to 89, was that of pathologist to the McLean Asylum, the department for mental diseases of the Massachusetts Hospital. Here he made the required autopsies and replaced the doctors holding clinical positions when they were away, as was often the case. He fitted up a room for laboratory and microscopic work and gave courses in mental pathology. The details of many of his autopsies are to be found in the Annual Reports of the Asylum.

On account of his expert knowledge, the Boston Lunatic Hospital was fortunate in securing him as pathologist, a position he held for twelve years. An important, if not the most important, feature of the Annual Reports was the full account of the autopsies, about one hundred, made by him. The model descriptions with full microscopic details of the pathological findings in obscure mental and spinal diseases, at a time when little was known by the medical profession of Boston about the pathology of these diseases, are well worth reading today, reminding one of the thorough, elaborate, scientific autopsies made in the best European hospitals. A friend quotes him as saying that he regretted not having been able to devote more time to research work on the brain, a subject which had always had a special interest for him. When he resigned from the hospital there was no one to fill the place as he had done and the Annual Reports lost much of their scientific value, and in future the mere statistical enumeration of cases under treatment made but dull reading.

At the same period he was pathologist to the Boston City Hospital, from 1882 to 1891, a very active position, having to do with demonstrations to the medical students. A valuable feature of this was a course of lectures on Visceral Anatomy. His exact knowledge of this subject made him an expert performer of autopsies, and his students enjoyed and profited by his talks pointing out the relation between the ante mortem diagnoses made by the hospital staff and the post mortem findings as demonstrated by the pathologist. We have one more hospital to add to those who were fortunate in being able to entrust their pathological department to Dr. Gannett. The Carney Hospital in South Boston appointed him pathologist in 1881 and he continued in charge till 1887. It is reasonable to believe that if there had been other hospitals in Boston in need of a pathologist, the position would have been offered to Dr. Gannett. Fortunately for all concerned, he was an industrious, hard worker, always on time, otherwise he would not have been able to carry on so much work in hospitals in widely separated parts of the city. His unusual interest in pathology was well known even before he began practice. An amusing incident is told of him by a medical friend, who with others, accompanied him on a vacation trip in Germany in 1880. In the spirit of fun they gave each other nicknames, supposed to be more or less appropriate. Dr. Gannett was known as "Buzz" because, like the buzzard, he was noted for his fondness for post mortem material.

Let us now consider the positions in which he achieved distinction in clinical medicine. From 1884 to 1891 he was Physician to Out-Patients in the Massachusetts General Hospital and at the latter date was advanced to Visiting Physician, in which position he continued until 1911 when he resigned and was made a member of the Board of Consultation. In the Medical School he held the position of Clinical Instructor in Auscultation from 1884 to '89 and in the two following years he gave instruction in pathology as well. On his promotion to Visiting Physician his title was changed to Instructor in Clinical Medicine. The auscultation courses were given to small sections of medical students and on them his thoroughness, his knowledge of ante mortem and post mortem methods of diagnosis made lasting impressions. He insisted on complete auscultation and percussion in every case in order to discover what was in good condition as well as what was pathological—nothing must be overlooked. The unusual opportunities he had had to follow cases of nervous and mental disease gave him a great advantage in studying and demonstrating cases with obscure nervous symptoms. Before the days of the knowledge of bacteriology and when the X-ray plate was unknown, a diagnostician who was an expert in auscultation and percussion and at the same time could visualize what the autopsy would show had a great advantage. It has been said by some of Dr. Gannett's contemporaries who knew his work that he was the best medical diagnostician in this part of New England. In addition to his Medical School courses he had many pri-

vate classes at his office. These were naturally popular and were taken by some of those who have since proved to be excellent practitioners and who have spoken of the valuable training in thoroughness learned from Dr. Gannett.

In the early years of his practice Dr. Gannett wrote a number of excellent papers. He was a good writer, very clear and concise. In college the high rank that he took in courses in English gave him an excellent style and he acquired a manner of expressing himself so as to make his meaning easily understood without the need of repetition. I have spoken of his valuable accounts of autopsies published in the Reports of the McLean Asylum and the Lunatic Hospital. At a meeting of the Massachusetts Medical Society in 1882 he read a paper on Relation of Mould Fungi to Disease, which shows his microscopic knowledge. In Loomis's System of Practical Medicine, New York, 1897, he wrote the chapters on Emphysema, Atelectasis, Oedema and Abscess of the lungs, and Syphilis and New Growths. In the *Boston Med. & Surg. Journal*, there are articles on air embolism, cases of sunstroke. Should nurses who are tuberculous be allowed the care of children?, Tumor of the brain and others.

For a number of years Dr. Gannett was medical examiner for the Connecticut Mutual Life Insurance Company and because of his recognized diagnostic acumen, his reports were accepted without question.

As we have seen, he devoted a great part of his early medical life to pathology and the microscope and to teaching exact methods of diagnosis. After 1905 he seldom appeared in print, but his reputation as an expert in diagnosis made him known as one who could be called upon in difficult cases, and his practice was mostly seeing patients in his office or out-of-town in consultation with other physicians. His office hours at his home, 274 Marlboro St. were from 12 to 3. He was an early automobile enthusiast and delighted in driving his own car, generally at a rapid pace. After his office hours were over, he often started to see a case, perhaps in New Hampshire, not returning until late in the evening. He would then sit up the greater part of the night reading, generally history, of which he was very fond. He had a large library of the best books; the walls of every room in his house are covered and every closet filled. He had a fine collection of English ballads and books on English history and the French Revolution, in fact, all kinds of serious reading appealed to him.

In 1925, at the age of 72, he registered as a student at Harvard University in a summer course in English history, and ever since then, until just before his death, he had continued to follow these courses, especially some on the French Revolution. He was a friend of several of the professors, who occasionally came to his house to see him and discuss historical subjects. He was a life member of the American Historical Association.

More than half of the top story of his house Dr. Gannett transformed into a workshop in which there were about twenty heavy metal lathes for wood or steel turning. Most of these were purchased from time to time from Brown & Sharpe, of Providence, R. I. The floor of the room had to be reinforced by iron girders to support the extra weight. At the top of the room there is a large iron beam fastened in such a way that it can be run out the window to hold a pulley and rope by which a new lathe can be pulled up into the workroom. The installation of the beam and the lathes, together with the electricity for lighting the room and operating the machines was done by Dr. Gannett with the help of his chauffeur. The room looks like a workshop in the Institute of Technology where students are taught the use of machinery. Here Dr. Gannett spent much of his spare time, making tools, instruments of precision, cases and works for his clocks and all sorts of articles required by him for different purposes. He was especially fond of a small foot lathe given to him when he was fifteen years of age by his father, and which he had used at frequent intervals for sixty years. Even today there are fresh shavings underneath it showing its recent use.

In a closet leading out from this workroom there is a large iron wheel and several connected smaller wheels supported on metal standards. To the wheel are attached by wire ropes some heavy weights and a pendulum, perhaps fifteen feet long, which is suspended in a special pocket in the wall of the house made to contain it. These are the works, without dial or hands, of a large tower or church clock purchased by Dr. Gannett a number of years ago to serve as a master clock for the numerous clocks throughout his home. The necessary wheels and other parts to adapt it to its purpose were made by him in his shop and the electric connections were installed by him. He received permission to join this to a standard time wire from Washington, and thus he was equipped to know the exact time. In his office there are six clocks, one which had been in the Naval Observatory in Washington, two are standard clocks made by the noted William Bond of Boston and there are two electric clocks made by Dr. Gannett. In his waiting room there are two tall clocks and in another room there is a tall chronometer clock which formerly stood in the window of Elson, the clock maker. In an upper chamber there is a clock which has been in his family for seven generations. In its long life it had met with several damaging accidents but Dr. Gannett had repaired it. Of his clocks he was very fond and when they needed cleaning he sometimes did this work himself, not being willing to entrust them to the ordinary watch repairer of the present day. Since cheap watches have come

into fashion, there is little call for the Frodshem, Patek-Phillippe movements of precision of former day. This love of machinery and of instruments of precision, seems utterly at variance with the character of a noted pathologist and clinician. It is rather to be looked for in a surgeon, perhaps an orthopedist, or a dentist who has to make his own appliances. Dr. Gannett remarked to a friend that if he had not been a doctor he would have chosen the profession of engineer.

He was a serious-minded, retiring man, not fond of society. The dinners of his college class were practically the only ones that appealed to him. Medical meetings had small attraction for him. His strong love for books and the irresistible inclination to work in his shop and on his clocks seems to have made him feel less the need for society and friends than if his tastes had been more like those of the ordinary individual. He was of medium height and slender build, of erect, almost military carriage, quick in his movements, giving the impression of normal health. He was abstemious in his habits, did not smoke, drink tea or coffee and was practically a teetotaler. As a young man he had an unusually youthful look and his friends had expected him to be long-lived, remembering the good care he took of himself. A few days before his death he went to his workshop in the evening and after some rather strenuous work with a large rasp he complained of pain across the upper part of his chest; after this, he was not himself in regard to ability to do his work. On the morning of April 21, he had an attack of heart failure and passed away in his 76th year. He is survived by his widow, Mrs. Gertrude Bowie (Maley) Gannett and by a daughter by a former marriage, Mrs. Philip M. Stearns, of the class of 1926 of Radcliffe College, now living in Hartford, Connecticut, with her husband and a young daughter.

JOHN W. FARLOW.

NOTICE

CORRECTION

Figure No. 8 in the article entitled "Endometriosis; the Occurrence of Endometriomata in the Abdominal Wall. Four Cases Following Operations in the Female Pelvis" by Dr. Meigs appeared incorrectly in the JOURNAL of May 16, page 1027.

The line which extended from top to bottom on the outer edge of the page was intended for the base line.

REPORT OF MEETING

THE ANNUAL MEETING OF THE MASSACHUSETTS SOCIETY OF EXAMINING PHYSICIANS

This meeting was held in the Copley Plaza Hotel May 23, 1929. Aside from the routine business the interest centered in a discussion of the dangers incident to the use of x-ray films.

The officers elected for the ensuing year are as follows:

Officers elected at the annual meeting were Dr. Joseph A. Mehan of Lowell, president; Dr. H. F. Day of Boston, Dr. Constantine Popoff of Haverhill, Dr. W. A. Bishop of Boston, vice presidents; Dr. W. Pearce Coues of Boston, secretary; and Dr. R. E. Gwinn of Boston, treasurer. The members of the Council are Dr. W. E. Brown, Dr. George W. Morse, Dr. J. J. McNamara, Dr. F. H. Gardner, Dr. Joseph H. Shortell, Dr. Thomas J. O'Brien and Dr. Henry C. Marble.

SOCIETY MEETINGS

May 31—Staff Meeting of the Massachusetts Homoeopathic Hospital. Detailed notice appears on page 1122, issue of May 23.

June 13—International Hospital Congress. Complete notice appears on page 212, issue of January 24.

July 8-9—American Association for the Study of Allergy Complete notice appears on page 906, issue of April 25.

July 9—American Heart Association. Scientific Meeting from 2 to 6 P. M. in the Auditorium of the Woman's Club, 448 Taylor Street, between 12th and 13th Streets, Portland, Oregon.

October 7-19—New York Academy of Medicine. Detailed notice appears on page 468, issue of February 28.

BOOK REVIEWS

The Injection Treatment of Hemorrhoids. By CHARLES CONRAD MILLER.

This is a small book of 119 pages in which the author gives his own experience and summarizes, freely, the experiences of others in the injection treatment of hemorrhoids. This form of treatment dates back to 1869. It is suited to uncomplicated internal hemorrhoids only. Various solutions have been used—carbolic acid, 10 to 20%, in glycerin and water, alcohol 96%, quinine and urea hydrochloride, formalin 1 to 2%, perchloride of iron, ergot, and lead acetate. Of these, only the first three have persisted in use to any extent. Carbolic acid is in greatest favor in Great Britain. The articles of Dukes, Anderson, Murphy, and Dunbar in British journals are quoted in considerable detail and are convincing. Dunbar says, "Cycling after the injection is not recommended though one man (a furnaceman) cycled four miles to work and cycled the same distance home again." Complications are few and practically never serious. The results of injection are good in a majority of the cases.

Textbook of Nervous Diseases. DANA. 10th Edition. 1925. Wm. Wood & Co.

This is an old standard textbook now presented in its tenth edition. By accretion it has grown to nearly 700 pages. The illustrations are many and excellent, the subject matter discursive. Valuable and instructive though it may be, a code of ethics by Cardinal Newman is not usually found in a textbook on neurology.

A later edition can be improved by a real revision, and the elimination of subject matter more commonly reserved for a history of medicine, or no longer particularly germane to the subject of neurology.